SHIELD

Pipes & Fittings

c UL us LISTED

Factory Mutual System

SHIELD

Introduction

SHIELD is a company created to cater to the infrastructure, fire protection and building services industries with a comprehensive range of products designed to be competitive and of assured quality.

We stay ahead of today's evolving market requirements by committing to a program of continued research and development.

We are able to maintain our high standards by ensuring that our worldwide manufacturing networks are the most advanced in the industry in Europe, Asia and America in terms of quality and delivery lead time. Our fully experienced and professional staff is there to provide engineering expertise and after sales service exactly when you need it.

Combine this with highly responsive and customer focused network of distribution centres around the world, you will find that customer satisfaction is what we excel at.

We are justifiably proud of our global client base. With offices and facilities in the UK and Middle East, we are able to comprehend the specific needs of your particular region.

SHIELD PIPING SYSTEM

Trusted Worldwide

Contents

Shield Pipes
Technical Data

Black and hot dipped galvanized steel welded pipes

Conforming to BS 1387:1985 (EN 10255)

Class	Nominal Bore		Outside Diameter				Wall Thickness		Weight of Black Pipes						Weight of Galvanised Pipes (Calculated)						No. of pipes packed per standard bundle (1 Tonne Approx.)
			Max.		Min.				Plain Ended			Screwed & Socketed			Plain Ended			Screwed & Socketed			
	Inch	mm	Inch	mm	Inch	mm	Inch	mm	kg/mtr	mtr/ton	ft/ton	kg/mtr	mtr/ton	ft/ton	kg/mtr	mtr/ton	ft/ton	kg/mtr	mtr/ton	ft/ton	
LIGHT (A)	1/2	15	0.843	21.4	0.827	21.0	0.079	2.00	0.947	1056	3465	0.956	1046	3432	1.000	1000	3281	1.009	991	3251	160
	3/4	20	1.059	26.9	1.039	26.4	0.091	2.30	1.380	725	2379	1.390	719	2359	1.440	694	2277	1.460	690	2264	110
	1	25	1.331	33.8	1.307	33.2	0.102	2.60	1.980	505	1657	2.000	500	1640	2.060	485	1591	2.090	478	1568	80
	1 1/4	32	1.673	42.5	1.650	41.9	0.102	2.60	2.540	394	1293	2.570	389	1276	2.640	379	1243	2.680	373	1224	61
	1 1/2	40	1.906	48.4	1.882	47.8	0.114	2.90	3.230	310	1017	3.270	306	1004	3.350	298	978	3.400	294	965	51
	2	50	2.370	60.2	2.346	59.6	0.114	2.90	4.080	245	804	4.150	241	791	4.220	237	778	4.300	233	764	37
	2 1/2	65	2.991	76.6	2.961	75.2	0.124	3.20	5.710	175	574	5.830	172	564	5.890	170	558	6.020	166	545	27
	3	80	3.492	88.7	3.461	87.9	0.124	3.20	6.720	149	489	6.890	145	476	6.930	144	472	7.100	141	463	24
	4	100	4.484	113.9	4.449	113.0	0.142	3.60	9.750	103	338	10.000	100	328	10.030	100	328	10.280	97	318	16
MEDIUM (B)	1/2	15	0.854	21.7	0.831	21.1	0.102	2.60	1.210	826	2710	1.220	820	2690	1.250	794	2605	1.260	787	2582	130
	3/4	20	1.071	27.2	1.047	26.6	0.102	2.60	1.560	641	2103	1.570	637	2090	1.620	617	2024	1.640	610	2001	100
	1	25	1.346	34.2	1.315	33.4	0.124	3.20	2.410	415	1362	2.430	412	1352	2.490	402	1319	2.510	398	1306	65
	1 1/4	32	1.689	42.9	1.657	42.1	0.124	3.20	3.100	323	1060	3.130	319	1047	3.200	312	1024	3.230	310	1017	51
	1 1/2	40	1.921	48.8	1.890	48.0	0.124	3.20	3.570	280	919	3.610	277	909	3.680	272	892	3.720	269	883	44
	2	50	2.394	60.8	2.354	59.8	0.142	3.60	5.030	199	653	5.100	196	643	5.170	193	633	5.250	190	623	30
	2 1/2	65	3.016	76.6	2.969	75.4	0.142	3.60	6.430	156	512	6.550	153	502	6.610	151	495	6.730	149	489	24
	3	80	3.524	89.5	3.469	88.1	0.157	4.00	8.370	119	390	8.540	117	384	8.580	117	384	8.760	114	374	19
	4	100	4.524	114.9	4.461	113.3	0.177	4.50	12.200	82	269	12.500	80	262	12.480	80	260	12.690	79	259	14
	5	125	5.535	140.6	5.461	138.7	0.197	5.00	16.600	60	197	17.100	58	190	16.940	59	194	17.440	57	187	10
	6	150	6.539	166.1	6.461	164.1	0.197	5.00	19.70	51	167	20.300	49	161	20.100	50	164	20.710	48	157	7
HEAVY (C)	1/2	15	0.854	21.7	0.831	21.1	0.124	3.20	1.440	694	2277	1.450	690	2264	1.490	671	2202	1.500	667	2188	110
	3/4	20	1.071	27.2	1.047	26.6	0.124	3.20	1.870	535	1755	1.880	532	1745	1.930	518	1700	1.950	513	1683	80
	1	25	1.346	34.2	1.315	33.4	0.157	4.00	2.940	340	1115	2.960	338	1109	3.010	332	1089	3.040	329	1079	55
	1 1/4	32	1.689	42.9	1.657	42.1	0.157	4.00	3.800	263	863	3.830	261	856	3.900	256	840	3.930	254	833	44
	1 1/2	40	1.921	48.8	1.890	48.0	0.157	4.00	4.380	228	748	4.420	226	741	4.490	223	732	4.530	221	725	37
	2	50	2.394	60.8	2.354	59.8	0.177	4.50	6.190	162	531	6.260	160	525	6.330	158	518	6.400	156	512	27
	2 1/2	65	3.016	76.6	2.969	75.4	0.177	4.50	7.930	126	413	8.050	124	407	8.110	123	404	8.230	121	397	20
	3	80	3.524	89.5	3.469	88.1	0.197	5.00	10.300	97	318	10.500	95	312	10.510	95	312	10.710	93	307	16
	4	100	4.524	114.9	4.461	113.3	0.213	5.40	14.500	69	226	14.800	68	223	14.770	68	223	15.070	67	220	12
	5	125	5.535	140.6	5.461	138.7	0.213	5.40	17.900	56	184	18.400	54	177	18.210	55	180	18.730	53	174	10
	6	150	6.539	166.1	6.461	164.1	0.213	5.40	21.300	47	154	21.900	46	151	21.700	46	151	22.300	45	148	7

Tolerances:
THICKNESS: Light Tube -8%, Medium and Heavy Tubes -10%.
WEIGHT: Single Tube +10% -8%, Quantity - 150 metres and above of one size & class ±4%.
LENGTH: 6 metres ±0.05 metres

SHIELD reserves the right to change the contents without notice.

Shield Pipes

FM APPROVED * UL LISTED *

Seamless steel pipe & welded steel pipe to ASTM A53, Grade A & B (Sizes, Dimensions & Weights)

Nominal Pipe size	O.D.	Schedule 10		Schedule 20		Schedule 30		Standard		Schedule 40		Schedule 60		Schedule 80	
Inch	mm	Wall	Wt.	Wall	Wt.	Wall	Wt.	Wall	Wt.	Wall	Wt.	Wall	Wt.	Wall	Wt.
3/8	17.1							2.31	0.84	**2.31**	**0.84**			3.20	1.10
1/2	21.3							2.77	1.27	**2.77**	**1.27**			3.73	1.62
3/4	26.7							2.87	1.69	**2.87**	**1.69**			3.91	2.21
1	33.4							3.38	2.50	**3.38**	**2.50**			4.55	3.25
1 1/4	42.2							3.56	3.39	**3.56**	**3.39**			4.85	4.47
1 1/2	48.3							3.68	4.05	**3.68**	**4.05**			5.08	5.39
2	60.3							3.91	5.44	**3.91**	**5.44**			5.54	7.48
2 1/2	73.0							5.16	8.63	**5.16**	**8.63**			7.01	11.41
3	88.9							5.49	11.29	**5.49**	**11.29**			7.62	15.27
3 1/2	101.6							5.74	13.57	**5.74**	**13.57**			8.08	18.63
4	114.3							6.02	16.07	**6.02**	**16.07**			8.56	22.32
5	141.3							6.55	21.77	**6.55**	**21.77**			9.52	30.94
6	168.3							7.11	28.26	**7.11**	**28.26**			10.97	42.56
8	219.1			6.35	33.31	7.04	36.31	8.18	42.55	**8.18**	**42.55**	10.31	53.08	12.70	64.64
10	273.0			6.35	41.75	7.80	51.01	9.27	60.29	**9.27**	**60.29**	12.70	81.52	15.09	95.97
12	323.8			6.35	49.71	8.38	65.18	9.52	73.78	**10.31**	**79.70**	14.27	108.92	17.48	132.04
14	355.6	6.35	54.69	7.92	67.9	9.52	81.25	9.52	81.25	**11.13**	**94.55**	15.09	126.71	19.05	158.10
16	406.4	6.35	62.64	7.92	77.83	9.52	93.17	9.52	93.17	**12.70**	**123.30**	16.66	160.12	21.44	203.53
18	457.2	6.35	70.60	7.92	87.75	11.13	122.43	9.52	105.10	**14.27**	**155.87**	19.05	205.83	23.83	254.67
20	508.0	6.35	78.55	9.52	117.02	12.70	155.12	9.52	117.02	**15.09**	**183.42**	20.62	247.83	26.19	311.17
24	610.0	6.35	94.46	9.52	140.88	14.27	209.50	9.52	140.88	**17.48**	**255.24**	24.61	355.02	30.96	441.78
26	660.0	7.92	127.43	12.70	202.85			9.52	152.80						

Shield reserves the right to change the contents without notice.

Tensile Requirements

	Grade A	Grade B
Tensile Strength, Min, Psi [MPa]	48,000 [330]	60,000 [415]
Yield Strength, Min, Psi [MPa]	30,000 [205]	35,000 [240]

Hydrostatic pressure test applied as per ASTM Standards

Wall = Wall thickness in mm
Wt. = Weight in Kg / Mtr.
Available in black & hot dipped galvanized
* UL & FM details are available in their respective certificates.

Shield Threaded Fittings

Shield Threaded Fittings feature a complete range of ductile iron / malleable iron threaded fittings in a wide variety of configurations in sizes from 1/2" to 6".

Shield fittings are UL, ULC listed and FM approved for water line and fire protection applications.

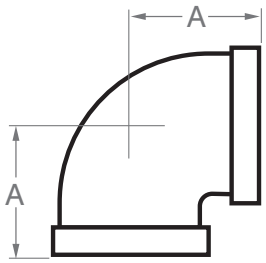
Materials	Ductile iron ASTM A536, BS EN 1563 Malleable Iron BS EN 1562
Max. Working Pressure	500 PSI
Dimensions	American Standard ASME B16.3, B16.4, B16.14, Unions B16.39 British Standard BS EN 10242, BS 143 & 1256
Threads	American Standard ANSI B1.20.1 British Standard BS 21, ISO 7/1 (Taper)
Finish	Black or hot dipped galvanized

c UL us LISTED

Factory Mutual System

Shield
Threaded Fittings

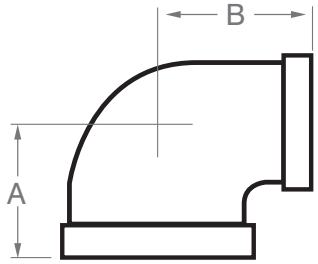
SDT-100 ELBOW 90°



UL/FM : ½" to 4"

Nominal Size Inch	A Inch	Nominal Size Inch	A Inch
1/2	1.12	2 1/2	2.70
3/4	1.31	3	3.08
1	1.50	3 1/2	3.42
1 1/4	1.75	4	3.79
1 1/2	1.95	5	4.5
2	2.25	6	5.13

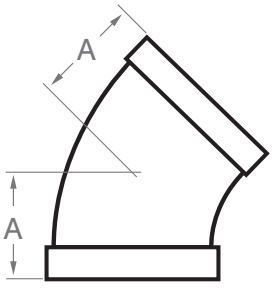
SDT-101 REDUCING ELBOW 90°



UL/FM : ¾" to 3"

Nominal Size Inch	A Inch	B Inch
3/4 x 1/2	1.20	1.22
1 x 1/2	1.26	1.36
1 x 3/4	1.37	1.45
1 1/4 x 1/2	1.34	1.53
1 1/4 x 3/4	1.45	1.62
1 1/4 x 1	1.58	1.67
1 1/2 x 1/2	1.41	1.66
1 1/2 x 3/4	1.52	1.75
1 1/2 x 1	1.65	1.80
1 1/2 x 1 1/4	1.82	1.88
2 x 3/4	1.60	1.97
2 x 1	1.73	2.02
2 x 1 1/2	2.02	2.16
2 1/2 x 2	2.39	2.60
2 1/2 x 1 1/2	2.16	2.51
3 x 2 1/2	2.83	3.00
3 x 2	2.52	2.89
4 x 3	3.30	3.60

SDT-200 ELBOW 45°



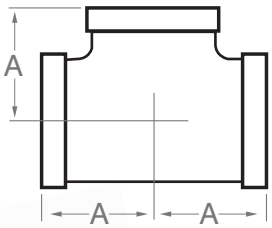
UL/FM : ½" to 2-½"

Nominal Size Inch	A Inch	Nominal Size Inch	A Inch
1/2	0.88	2 1/2	1.95
3/4	0.98	3	2.17
1	1.12	3 1/2	2.39
1 1/4	1.29	4	2.61
1 1/2	1.43	5	3.05
2	1.68	6	3.46

SHIELD reserves the right to change the contents without notice.

Shield
Threaded Fittings

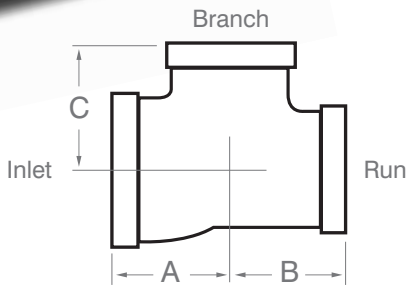
SDT-12 TEE



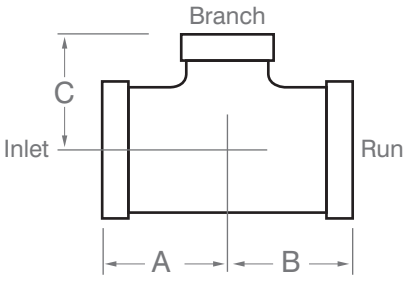
UL/FM: ½" to 4"

Nominal Size Inch	A Inch	Nominal Size Inch	A Inch
1/2	1.12	2 1/2	2.70
3/4	1.31	3	3.08
1	1.50	3 1/2	3.42
1 1/4	1.75	4	3.79
1 1/2	1.95	5	4.50
2	2.25	6	5.13

SDT-53 REDUCING TEE



UL/FM: ¾" to 2-½"



UL/FM: ¾" to 3"

Nominal Size Inlet Inch	Nominal Size Run Inch	Nominal Size Branch Inch	A Inch	B Inch	C Inch
3/4	3/4	1/2	1.20	1.20	1.22
1	1/2	1	1.50	1.36	1.50
	3/4	1/2	1.26	1.20	1.36
		3/4	1.37	1.31	1.45
		1	1.50	1.45	1.50
	1	1/2	1.26	1.26	1.36
		3/4	1.37	1.37	1.45
1 1/4	1	1/2	1.34	1.26	1.53
		3/4	1.45	1.37	1.62
		1	1.58	1.50	1.67
		1 1/4	1.75	1.67	175
	1 1/4	1/2	1.34	1.34	1.53
		3/4	1.45	1.45	1.62
		1	1.58	1.58	1.67
1 1/2	1	1/2	1.44	1.31	1.69
		3/4	1.50	1.37	1.75
		1	1.65	1.50	1.80
		1 1/2	1.94	1.80	1.94
	1 1/4	1/2	1.41	1.34	1.66
		3/4	1.52	1.45	1.75
		1	1.65	1.58	1.80
	1 1/2	1/2	1.41	1.41	1.66
		3/4	1.52	1.52	1.75
		1	1.65	1.65	1.80
		1 1/4	1.82	1.82	1.88
2	1	2	2.25	2.02	2.25
	1 1/4	2	2.25	2.10	2.25
	1 1/2	1/2	1.49	1.41	1.88
		3/4	1.60	1.52	1.97
		1	1.73	1.65	2.02
		1 1/2	2.02	1.94	2.16
		2	2.25	2.16	2.25
	2	1/2	1.49	1.49	1.88
		3/4	1.60	1.60	1.97
		1	1.73	1.73	2.02
		1 1/4	1.90	1.90	2.10
		1 1/2	2.02	2.02	2.16
2 1/2	2	3/4	1.74	1.60	2.32

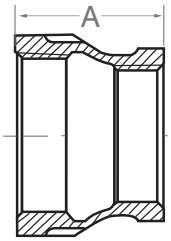
Note: Sizes available upto 6" x 6" x 2"
SHIELD reserves the right to change the contents without notice.

c UL us LISTED

Factory Mutual System

Shield Threaded Fittings

SDT-30 REDUCING COUPLING

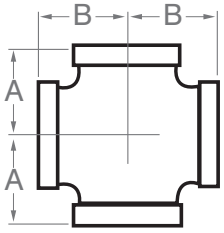


UL/FM: ½" to 1-½"

Nominal Size Inch	A Inch	Nominal Size Inch	A Inch
3/4 x 1/2	1.52	1 1/2 x 1 1/4	2.18
1 x 1/2	1.67	2 x 1	2.53
1 x 3/4	1.67	2 x 1 1/4	2.53
1 1/4 x 3/4	1.93	2 x 1 1/2	2.53
1 1/4 x 1	1.93	2 1/2 x 2	2.68
1 1/2 x 1	2.18		

Note: Sizes are available up to 6"

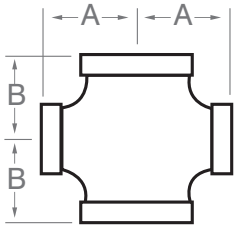
SDT-13 CROSS



UL/FM : 1" to 2"

Nominal Size Inch	A Inch	B Inch
1	1.50	1.50
1 1/4	1.75	1.75
1 1/2	1.95	1.95
2	2.25	2.25
2 1/2	2.70	2.70
3	3.08	3.08
3 1/2	3.42	3.42
4	3.79	3.79
5	4.50	4.50
6	5.13	5.13

SDT-51 REDUCING CROSS



UL/FM : 1-¼" to 2"

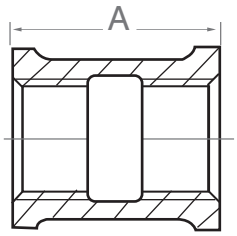
Nominal Size Inch	A Inch	B Inch
1 1/4 x 1 1/4 x 1 x 1	1.67	1.58
I 1/2 x 1 1/2 x 1 x 1	1.80	1.65
2 x 2 x 1 x 1	2.02	1.73
2 1/2 x 2 1/2 x 2 x 2	2.37	2.60
3 x 3 x 2 x 2	2.52	2.89

SHIELD reserves the right to change the contents without notice.

Factory Mutual System

Shield Threaded Fittings

SDT-22 STRAIGHT COUPLING

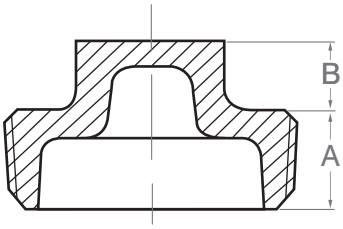


UL/FM : ½" to 2-½"

Nominal Size Inch	A Inch	Nominal Size Inch	A Inch
1/2	1.34	2	2.53
3/4	1.52	2 1/2	2.68
1	1.67	3	3.18
1 1/4	1.93	4	3.69
1 1/2	2.18		

Note: Sizes are available up to 6"

SDT-55 PLUG

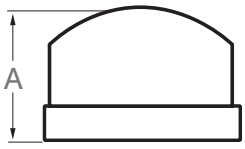


UL/FM : ½" to 2"

Nominal Size Inch	A Inch	B Inch
1/2	0.56	0.38
3/4	0.63	0.44
1	0.75	0.50
1 1/4	0.80	0.56
1 1/2	0.83	0.62
2	0.88	0.58
2 1/2	1.07	0.74
3	1.13	0.80
3 1/2	1.18	0.86

Note: Sizes are available up to 6"

SDT-14 CAP



UL/FM : ½" to 2-½"

Nominal Size Inch	A Inch	Nominal Size Inch	A Inch
1/2	0.87	2	1.45
3/4	0.97	2 1/2	1.70
1	1.16	3	1.80
1 1/4	1.28	4	2.08
1 1/2	1.33	6	2.55

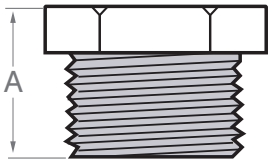
SHIELD reserves the right to change the contents without notice.

c UL us LISTED

Factory Mutual System

Shield Threaded Fittings

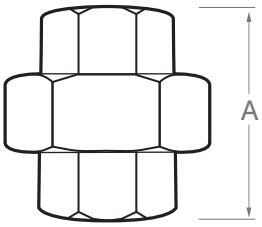
SDT-57 HEX BUSHING



UL/FM: ¾" to 2"

Nominal Size Inch	A Inch
1 x 1/2	1.06
1 x 3/4	1.06
1 1/4 x 1	1.18
1 1/2 x 1	1.26
1 1/2 x 1 1/4	1.26
2x1	1.34
2 x 1 1/4	1.34
2 x 1 1/2	1.34

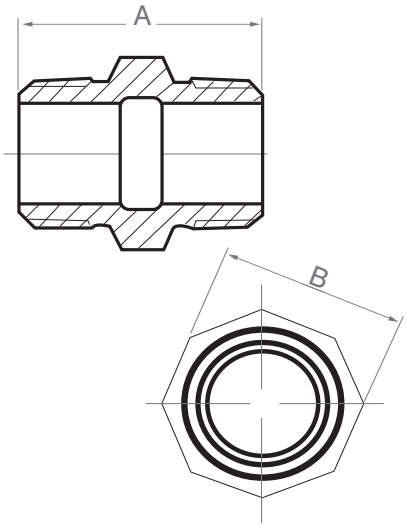
SDT-59 UNION



UL/FM: 1" to 2"

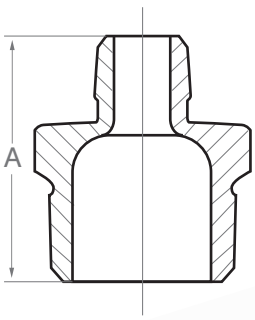
Nominal Size Inch	A Inch
1/2	1.72
3/4	1.94
1	2.06
1 1/4	2.26
1 1/2	2.41
2	2.75
2 1/2	3.22
3	3.50
4	3.85

SDT-11 HEX NIPPLE



Nominal Size Inch	A Inch	B Inch
1/2	1.57	0.98
3/4	1.77	1.18
1	2.05	1.45
1 1/4	2.20	1.81
1 1/2	2.28	2.05
2	2.56	2.52
2 1/2	2.83	3.15
3	3.15	3.70
4	3.62	4.65

SDT-111 HEX REDUCING NIPPLE



Nominal Size Inch	A mm
1/4 x 1/8	31.00
1x 3/4	54.00
1 1/4 x 1/2	57.00
2 x 1 1/2	68.00
2 1/2 x 1	75.00
2 1/2 x 1 1/4	75.00
2 1/2 x 1 1/2	75.00
2 1/2 x 2	75.00
3 x 1 1/2	83.00
3 x 2	83.00
3 x 2 1/2	83.00

SHIELD reserves the right to change the contents without notice.

c UL us LISTED

Factory Mutual System

Shield
Grooved Fittings

The Shield Grooved System provides an economical and efficient piping system solution and offers significant benefits when compared to conventional types of pipe connections including:

- Faster Installation
- Because there is no need for welding or heating, the Shield System ensures a safer and reliable working environment
- Ensures easy alignment
- Reduces noise and vibration
- Easy to install and remove in case of any maintenance requirements

Feature a wide range of coupling and fittings for piping applications in Air Conditioning, Fire Fighting Systems and water pipe lines etc.

Shield Grooved Systems offer 3 types of couplings:
High Pressure Couplings (Flexible) • Medium Pressure Couplings (Rigid, Flexible) • Light Pressure Couplings (Rigid, Flexible)

Material
Shield Grooved Coupling housing and other grooved fittings are cast from Ductile Iron to ASTM A536 Grade 65-45-12 in red paint or hot dipped galvanized, bolts are carbon steel to ISO 898 - 1 class 8.8 heat treated.

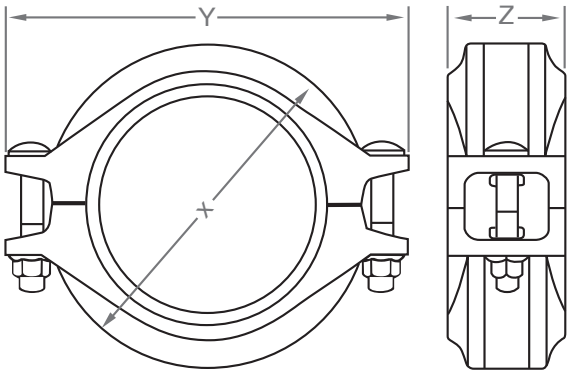
Gasket (C shaped)
It is important to use the gasket that suits your application, use the table below to select the optimum gasket.

Material	Temp Range	Colour	General Recommended Application
EPDM	-34°C to +110°C	Green Strip	Hot water service, variety of diluted acid, oil free air, chemical. This is NOT recommended for Petroleum services.
Nitrile	-29°C to +82°C	Orange Strip	Petroleum products, vegetable and mineral oils, air with oil vapours. This is NOT recommended for hot water +66°C or for hot dry air over +60°C.
Silicone	-34°C to +177°C	Red Gasket	Dry heat and air without hydrocarbons up to +177°C and certain chemicals

Shield Grooved Coupling Gaskets must be lubricated on the lips and outside back prior to assembly using Shield lubricant or equivalent for a wet system. However for a dry system Shield recommends using a silicone based lubricant. Note: Petroleum based lubricants should NOT be used at all.

c UL us LISTED Factory Mutual System

Shield Rigid Coupling



SDG-22 Standard

Nominal Size Inch	Pipe O.D. mm	Maximum Working Pressure PSI	Dimensions X mm	Y mm	Z mm	Bolt/Nut No. - Size mm
1	33.4	500	59	100	44	2 3/8 x 55
1 1/4	42.2	500	66	105	45.05	2 3/8 x 55
1 1/2	48.3	500	72	110	45.5	2 3/8 x 55
2	60.3	500	86	132.5	46.5	2 3/8 x 55
2 1/2	73.0	500	99	154	46.5	2 1/2 x 60
3 O.D	76.1	500	102.5	152.5	46.5	2 1/2 x 70
3	88.9	500	117	168.5	46.5	2 1/2 x 75
4	114.3	500	148	200	52.5	2 1/2 x 75
5 1/2 O.D	139.7	500	172	235	52.5	2 5/8 x 85
5	141.3	500	172	231.5	52.5	2 5/8 x 85
6 1/2 O.D	165.1	500	199.5	267.5	53.5	2 5/8 x 85
6	168.3	500	203	271.5	53.5	2 5/8 x 85
8	219.1	450	246.5	350	61.5	2 3/4 x 115
10	273.0	300	333	428	63	2 3/4 x 115
12	323.9	300	390	470	63	2 7/8 x 140
14	355.6	300	415	510	72	3 7/8 x 140
16	406.4	300	468	575	72	3 7/8 x 140
18	457.2	225	508	608	78	3 7/8x 140
20	508.0	225	563	660	78	4 7/8 x 140
24	610.0	225	668	772	78	4-1 x 140

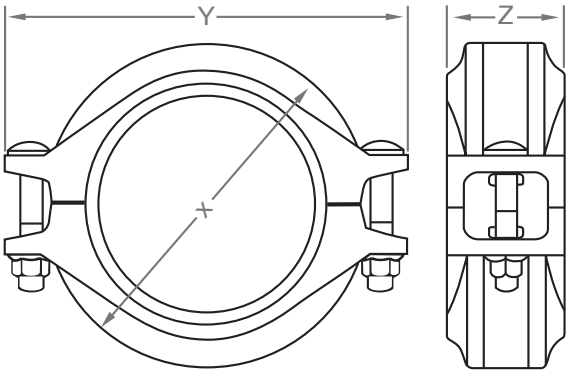
SHIELD reserves the right to change the contents without notice • Refer to UL/FM approvals for details.

Shield Rigid Coupling provides rigid joints to prevent linear movement of pipe assembly. With a unique ends locked design, SDG-22 coupling can be used when the application or design calls for rigid installations.

c UL us LISTED

Factory Mutual System

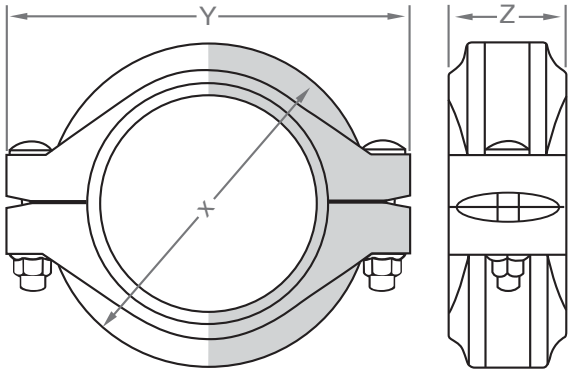
Shield Light Rigid Coupling



SDG-20

Nominal Size Inch	Pipe O.D. mm	Maximum Working Pressure PSI	Dimensions X mm	Dimensions Y mm	Dimensions Z mm	Bolt/Nut No. - Size mm
2	60.3	300	87.2	122.5	44	2 3/8 x 2 1/8
2 1/2	73.0	300	96.8	138.5	44	2 3/8x 2 1/8
3 O.D	76.1	300	100.8	141.5	44	2 3/8x 2 1/8
3	88.9	300	113.5	157.5	44	2 3/8x 2 3/4
4	114.3	300	142.0	185.5	48	2 3/8x 2 3/4
5 1/2 O.D	139.7	300	168.5	225.5	50	2 1/2 x 3
6 1/2 O.D	165.1	300	196.0	252.7	50	2 1/2 x 3
6	168.3	300	198.8	256.5	50	2 1/2 x 3
8	219.1	300	256.0	325.0	58	2 1/2 x 75

Shield Flexible Couplings



SDG-27 Heavy Duty

Nominal Size Inch	Pipe O.D. mm	Maximum Working Pressure PSI	Dimensions X mm	Dimensions Y mm	Dimensions Z mm	Bolt/Nut No. - Size mm
2	60.3	750	91	133	46.5	2 1/2 x 75
2 1/2	73.0	750	104	165	46.5	2 1/2 x 75
3 O.D	76.1	750	107	165	46.5	2 1/2 x 75
3	88.9	750	122	171	47.0	2 1/2 x 75
4	114.3	750	151.5	213	52.0	2 5/8x 85
5	141.3	750	182	241	52.0	2 3/4x 115
6 1/2 O.D	165.1	750	208	281	52.0	2 3/4x 115
6	168.3	750	210	286	52.0	2 3/4x 115
8	219.1	750	268	354	62.0	2 7/8x 140

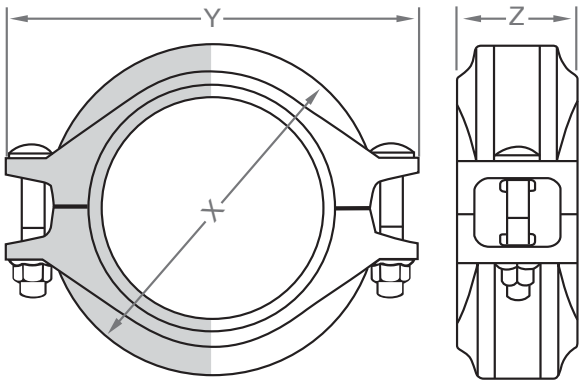
Shield SDG-27 is a high pressure flexible coupling can be used in different applications where high pressure service is required.

SHIELD reserves the right to change the contents without notice.
Refer to UL/FM approvals for details.

c UL us LISTED

Factory Mutual System

Shield Flexible Couplings



SDG-25 Standard

Nominal Size Inch	Pipe O.D. mm	Maximum Working Pressure PSI	Dimensions X mm	Y mm	Z mm	Bolt/Nut No. - Size mm
1 1/4	42.2	500	66.5	103.0	45.5	2 3/8 x 55
1 1/2	48.3	500	72.0	108.0	45.0	2 3/8 x 55
2	60.3	500	84	129.0	45.0	2 3/8 x 55
2 1/2	73.0	500	101	142.0	45.5	2 3/8 x 55
3 O.D	76.1	500	102	147.0	45.5	2 3/8 x 55
3	88.9	500	116.0	163.5	45.5	2 1/2 x 75
4	114.3	500	145	197.0	50.0	2 1/2 x 75
5 1/2 O.D	139.7	500	169	237.5	51.0	2 5/8 x 80
5	141.3	500	169	230.0	51.0	2 5/8 x 80
6 1/2 O.D	165.1	500	196.5	261.5	51.0	2 5/8 x 85
6	168.3	500	201	268.0	51.0	2 5/8 x 85
8	219.1	450	260.5	349.5	58.5	2 3/4 x 115
10	273.0	300	318	395.0	65.0	2 3/4 x 120
12	323.9	300	368.7	458.2	65.0	2 7/8 x 140
14	355.6	300	402	493.0	72.0	3 7/8 x 140
16	406.4	300	458	547.0	72.0	3 7/8 x 140
18	457.2	300	505	598.0	78.0	3 7/8 x 140
20	508.0	300	550	648.0	78.0	4 7/8 x 140
24	610.0	300	662	774.0	78.0	4 -1 x 140

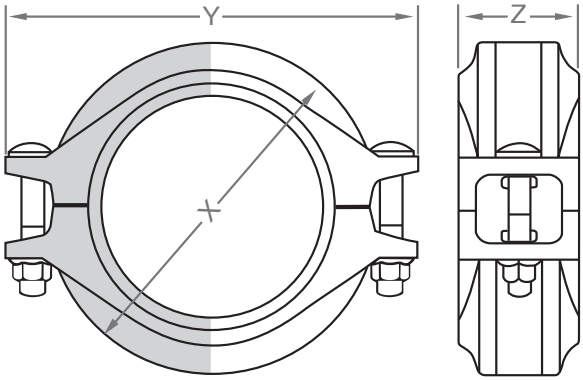
Shield Flexible Couplings allow controlled angular movement of the pipe to assist alignment and installation. The advantage of flexibility must be considered in the design for hanger and support spacing.

SHIELD reserves the right to change the contents without notice • Refer to UL/FM approvals for details.

c UL US LISTED

c UL US LISTED Factory Mutual System

Shield Light Flexible Coupling



SDG-21

SDG-21 is designed for a maximum working pressure of 300psi. The flexibility benefits of this coupling can be used in applications where high pressure is not required.

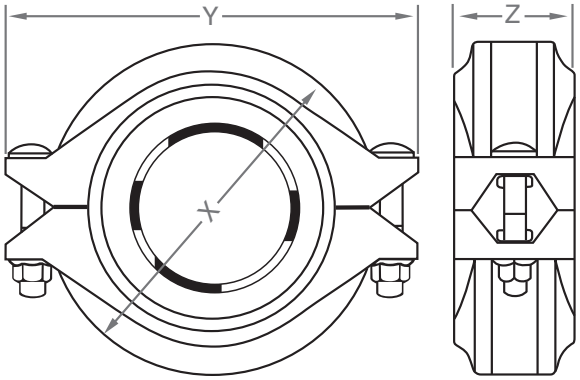
Nominal Size	Pipe O.D.	Maximum Working Pressure	Dimensions			Bolt/Nut No. - Size
			X	Y	Z	
Inch	mm	PSI	mm	mm	mm	mm
2	60.3	300	85.0	124	46.0	$2^{3}/_{8}$ x 55
$2^{1}/_{2}$	73.0	300	99.0	137	46.0	$2^{3}/_{8}$ x 55
3 O.D	76.1	300	102	140	46.0	$2\,^{3}/_{8}$ x 55
3	88.9	300	115.5	153	46.0	$2^{3}/_{8}$ x 70
4	114.3	300	148	184	50.5	$2^{3}/_{8}$ x 70
$5^{1}/_{2}$ O.D	139.7	300	173	225	50.5	$2^{1}/_{2}$ x 75
$6^{1}/_{2}$ O.D	165.1	300	199.5	248	50.5	$2^{1}/_{2}$ x 80
6	168.3	300	203	252	50.5	$2^{1}/_{2}$ x 80
8	219.1	300	261	399	61.5	$2^{5}/_{8}$ x 95

SHIELD reserves the right to change the contents without notice • Refer to UL/FM approvals for details.

c UL us LISTED

Factory Mutual System

Shield Reducing Coupling



SDG-30

Shield SDG-30 Reducing Coupling allows in line reduction of the pipe diameter on a piping run. SDG-30 can also replace the need for two couplings as well as reducing fittings.

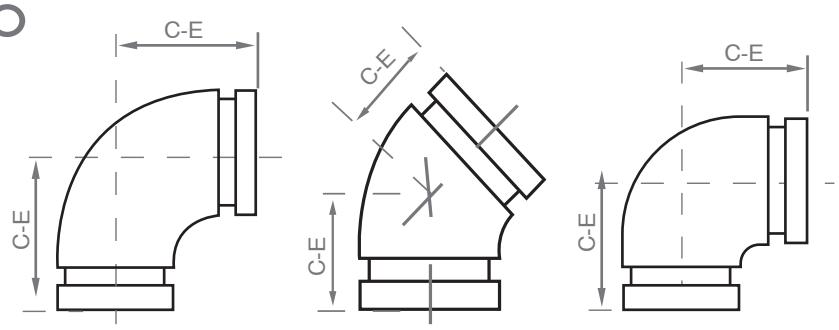
Nominal Size Inch	Pipe O.D. mm	Maximum Working Pressure PSI	Dimensions X mm	Y mm	Z mm	Bolt/Nut No. - Size mm
2 x 1 1/2	60.3 x 48.3	300	85	122	46.7	2 3/8 x 55
2 1/2 x 2	73.0 x 60.3	300	101	138	46.7	2 3/8 x 55
3 O.D x 2	76.1 x 60.3	300	102.5	144	46.7	2 3/8 x 55
3 x 2	88.9 x 60.3	300	117.5	168	46.7	2 1/2 x 55
3 x 2 1/2	88.9 x 73.0	300	117.5	168	46.7	2 1/2 x 55
3 x 3 O.D	88.9 x 76.1	300	117.5	168	46.7	2 1/2x 55
4 x 2	114.3 x 60.3	300	147.8	198	52.4	2 1/2 x 55
4 x 2 1/2	114.3 x 73.0	300	147.8	198	52.4	2 1/2 x 55
4 x 3 O.D	114.3 x 76.1	300	147.8	198	52.4	2 1/2 x 55
4 x 3	114.3 x 88.9	300	147.8	198	52.4	2 1/2 x 55
5 1/2 O.D x 4	139.7 x 114.3	300	172	250	52.4	2 5/8 x 85
6 1/2 O.D x 3	165.1 x 88.9	300	199.6	269	53.4	2 5/8 x 85
6 1/2 O.D x 4	165.1 x 114.3	300	199.6	269	53.4	2 5/8 x 85
6 x 3	168.3 x 88.9	300	202.8	275	53.4	2 5/8 x 85
6 x 4	168.3 x 114.3	300	202.8	275	53.4	2 5/8 x 85
8 x 6 1/2 O.D	219.1 x 165.1	300	260	334	61.7	2 3/4 x 115
8 x 6	219.1 x 168.3	300	260	334	61.7	2 3/4 x 115

SHIELD reserves the right to change the contents without notice • Refer to UL/FM approvals for details.

c UL us LISTED

Factory Mutual System

Shield 90° & 45° Elbows

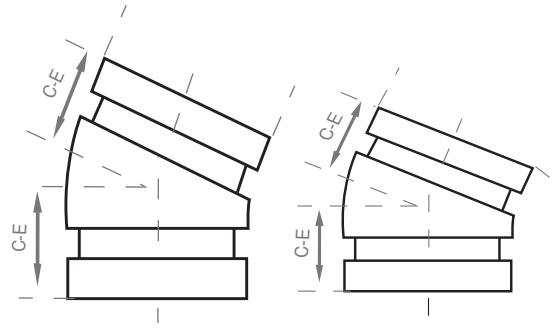


90° SDG-100, 45° SDG-200, 90° SDG-105

Nominal Size	Pipe O.D.	Maximum Working Pressure	90° SDG-100 Dimensions	45° SDG-200 Dimensions	90° SDG-105 Dimensions	
			C-E	C-E	Maximum Working Pressure	C-E
Inch	mm	PSI	mm	mm	PSI	mm
1	33.4	500	57	38.0		
1 1/4	42.2	500	70	44.0		
1 1/2	48.3	500	70	44.0		
2	60.3	500	82.50	51.0	300	70.00
2 1/2	73.0	500	95	57.0	300	76.00
3 O.D	76.1	500	101.50	57.0	300	76.00
3	88.9	500	108	64.0	300	85.50
4	114.3	500	127	76.0	300	101.00
5 1/2 O.D	139.7	500	140	82.5	300	101.00
5	141.3	500	140	83.0	300	124.00
6 1/2 O.D	165.1	500	165	89.0	300	140.00
6	168.3	500	165	89.0	300	140.00
8	219.1	500	197	108.0	300	175.00
10	273.0	500	229	120.0		
12	323.9	500	254	133.0		
14	355.6	300	279	152.0		
16	406.4	300	305	184.0		
18	457.2	300	394	203.0		

SHIELD reserves the right to change the contents without notice • Refer to UL/FM approvals for details.

Shield 22.5° & 11.25° Elbows



22.5° SDG-225 & 11.25° SDG-112

Nominal Size Inch	Pipe O.D. mm	Maximum Working Pressure PSI	**22.5° Elbow** Dimensions C-E mm	**11.25° Elbow** Dimensions C-E mm
2	60.3	500	51	35
2 1/2	73.0	500	51	38
3 O.D	76.1	500	51	38
3	88.9	500	57	38
4	114.3	500	73	44
5	141.3	500	73	51
6	168.3	500	79	51
6 1/2 O.D	165.1	500	79	51
8	219.1	500	98	51

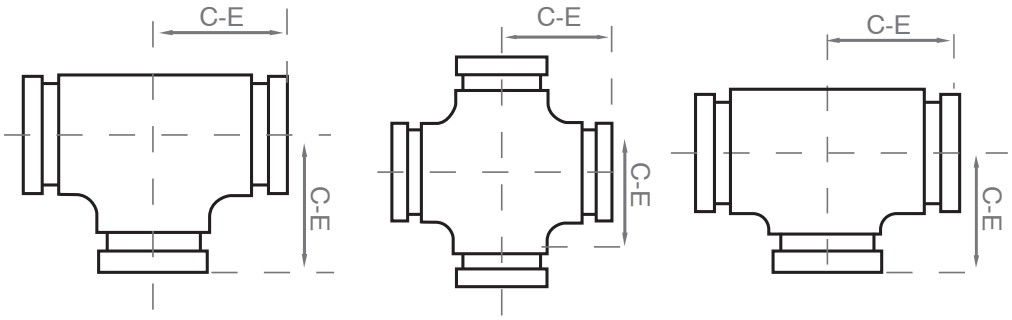
SHIELD reserves the right to change the contents without notice.

Factory Mutual System

c UL us LISTED

Factory Mutual System

Shield Tees



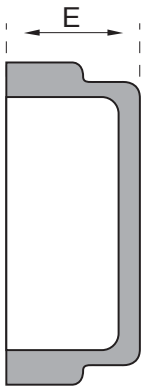
SDG-12 Tee, SDG-13 Cross Tee, SDG-102 Tee

Nominal Size	Pipe O.D.	Maximum Working Pressure	SDG-12 Tee Dimensions C-E	SDG-13 Cross Tee Dimensions C-E	SDG-102 Tee (Short) Dimensions	
					Maximum Working Pressure	C-E
Inch	mm	PSI	mm	mm	PSI	mm
1	33.4	500	57	57		
1 1/4	42.2	500	70	70		
1 1/2	48.3	500	70	70		
2	60.3	500	82.5	82.5	300	69.8
2 1/2	73.0	500	95	95	300	76.1
3 O.D	76.1	500	101.5	101.5	300	76.1
3	88.9	500	108	108	300	85.87
4	114.3	500	127	127	300	101.7
5 1/2 O.D	139.7	500	140	139.5	300	124.0
5	141.3	500	140	139.5	300	124.0
6 1/2 O.D	165.1	500	165	165	300	140.0
6	168.3	500	165	165	300	140.0
8	219.1	500	197	197	300	174.7
10	273.0	500	229	229		
12	323.9	500	254	254		
14	355.6	300	279			
16	406.4	300	305			

• Reducing cross (grooved, threaded) are also available contact sheild for details.

Shield Cap

SDG-14



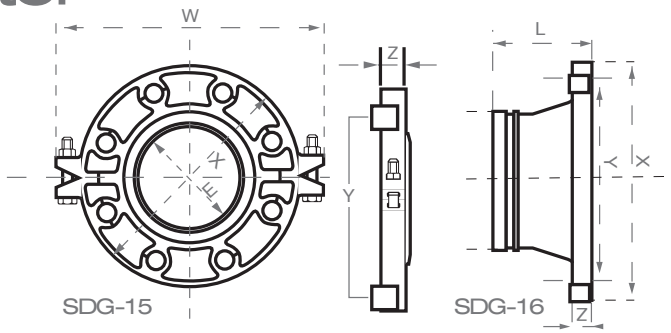
Nominal Size	Pipe O.D.	Maximum Working Pressure	Cap Dimension
			E
Inch	mm	PSI/Mpa	mm
1 1/4	42.2	500	25.50
1 1/2	48.3	500	25.50
2	60.3	500	25.50
2 1/2	73.0	500	25.50
3 O.D	76.1	500	25.50
3	88.9	500	25.50
4	114.3	500	27
5 1/2 O.D	139.7	500	27
5	141.3	500	27
6 1/2 O.D	165.1	500	27
6	168.3	500	27
8	219.1	500	30.2
10	273.0	500	32
12	323.9	500	32

• SHIELD reserves the right to change the contents without notice • Refer to UL/FM approvals for details.

c UL us LISTED

Factory Mutual System

Shield Grooved & Adaptor Flange



Grooved Flange SDG-15 & Adaptor Flange SDG-16

PN10/PN16

Nominal Size	Pipe O.D.	Max. Working Pressure	Grooved Flange Dimensions							Adaptor Flange Dimensions				
			W	Z	X	Y	E	Bolt / Nut No. - Size		L	X	Y	Z	Bolt / Nut No. - Size
Inch	mm	PSI	mm	mm	mm	mm	mm	mm		mm	mm	mm	mm	mm
1 1/2	48.3	300	195	19	150	110	45.4	2-M10x50	4-M16	60.3	150	110	16	4-M16
2	60.3	300	220	19	165	125	57.5	2-M10x50	4-M16	65	165	125	16	4-M16
3 O.D	76.1	300	235	19	185	145	72.7	2-M10x50	4-M16	65	185	145	16	4-M16
3	88.9	300	252	19	200	160	85.5	2-M10x50	8-M16	65	200	160	16	8-M16
4	114.3	300	277	19	229	180	110.5	2-M10x55	8-M16	70	220	180	16	8-M16
5 1/2 O.D	139.7	300	318	23	254	210	135.5	2-M12x65	8-M16	70	250	210	18	8-M16
6 1/2 O.D	165.1	300	346	23	280	240	160.8	2-M12x65	8-M20	70	285	240	18	8-M20
6	168.3	300	346	24	280	240	164.3	2-M12x65	8-M20	70	285	240	18	8-M20
8	219.1	300	414	30	340	295	214.9	2 3/8 x 70	12-M20	80	340	295	19	12-M20
10	273.0	300	481	30	406	355	268.9	2 3/8 x 70	12-M24	85	406	355	21	12-M24
12	323.9	300	530	30	483	410	318.9	2 3/8 x 70	12-M24	90	460	410	25	12-M24

ANSI 125/150

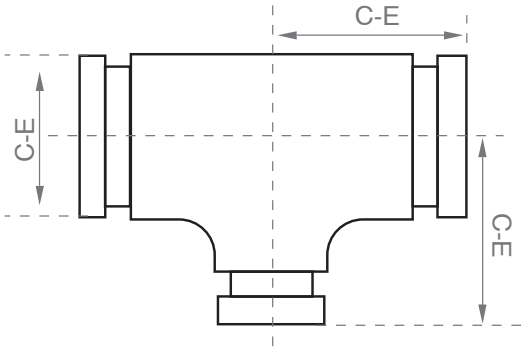
Nominal Size	Pipe O.D.	Max. Working Pressure	Grooved Flange Dimensions						Adaptor Flange Dimensions				
			X	Z	Y	E	Bolt / Nut No. - Size		L	X	Y	Z	Bolt / Nut No. - Size
Inch	mm	PSI	mm	mm	mm	mm	Inch		mm	mm	mm	mm	Inch
2 1/2	73.0	300	178	19	140	69.8	2-M10x50	4- 5/8	65	185	139.7	16	4 - 5/8
3	88.9	300	192	19	152	85.5	2-M10x50	4 - 5/8	65	200	152.4	16	4 - 5/8
4	114.3	300	229	19	191	110.5	2-M10x55	8 - 5/8	70	229	190.5	16	8 - 5/8
5	141.3	300	250	22	216	137.4	2-M12x65	8 - 3/4	70	250	216.0	18	8 - 3/4
6	168.3	300	285	22	241	164.3	2-M12x65	8 - 3/4	70	282	241.3	18	8 - 3/4
8	219.1	300	341	30	298	214.9	2 3/8 x 70	8 - 3/4	80	340	298.5	19	8 - 3/4
10	273.0	300	406	30	362	268.9	2 3/8 x 70	12 - 7/8	100	406	361.9	22	12 - 3/4
12	323.9	300	482	30	432	318.9	2 3/8 x 70	12 - 7/8	102	483	431.8	22	12 - 3/4

Class 300

Size		Grooved Flange Dimensions					
		O.D. of Flange	I.D.	Thickness	PCD	O.D. Inc. Bolt	Bolt Size
Inch	mm	X mm	E mm	Z mm	Y mm	W mm	Inch
2 1/2	73.0	190	69.60	24.6	149.2	244.0	8 - 3/4
3	88.9	210	84.60	28.0	168.3	274.0	8 - 3/4
4	114.3	255	110.20	31.5	200.0	310.0	8 - 3/4
6	168.3	320	164.20	35.5	269.9	388.0	12 - 3/4
8	219.1	380	214.93	41.0	330.2	470.4	12 - 7/8

SHIELD reserves the right to change the contents without notice • Refer to UL/FM approvals for details.

Shield Grooved Reducing Tee



SDG-53

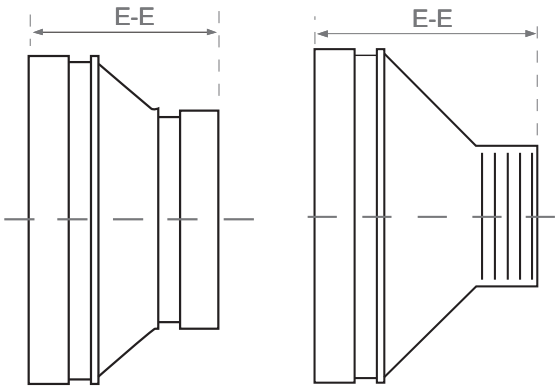
Nominal Size Inch	Pipe O.D. mm	Maximum Working Pressure PSI	C-E mm
2 x 1	60.3 x 33.4	500	82.5
2 x 1½	60.3 x 48.3	500	82.5
3O.D x 2	76.1 x 60.3	500	101.5
3 x 1	76.1 x 33.4	500	108
3 x 2	88.9 x 60.3	500	108
3 x 3 O.D	88.9 x 76.1	500	108
4 x 1	114.3 x 33.4	500	127
4 x 2	114.3 x 60.3	500	127
4 x 3 O.D	114.3 x 76.1	500	127
4 x 3	114.3 x 88.9	500	127
5½ O.D x 2	139.7 x 60.3	500	139.5
5½ O.D x 3 O.D	139.7 x 76.1	500	139.5
5½ O.D x 3	139.7 x 88.9	500	139.5
5½ O.D x 4	139.7 x 114.3	500	139.5
5 x 2	141.3 x 60.3	500	139.5
6 ½ O.D x 2	165.1 x 60.3	500	165
6 ½O.D x 3 O.D	165.1 x 76.1	500	165
6 ½ O.D x 3	165.1 x 88.9	500	165
6 ½ O.D x 4	165.1 x 114.3	500	165
6½ O.D x 51/2 O.D	165.1 x 139.7	500	165
6 x 2	168.3 x 60.3	500	165
6 x 2½	168.3 x 73.0	500	165
6 x 4	168.3 x 114.3	500	165
6 x 5	168.3 x 141.3	500	165
8 x 2	219.1 x 60.3	500	197
8 x 3 O.D	219.1 x 76.1	500	197
8 x 3	219.1 x 88.9	500	197
8 x 4	219.1 x 114.3	500	197
8 x 5½ O.D	219.1 x 139.7	500	197
8 x 6½ O.D	219.1 x 165.1	500	197
8 x 6	219.1 x 168.3	500	197
10 x 6½ O.D	273.0 x 165.1	500	229
10 x 8	273.0 x 219.1	500	229
12 x 8	323.9 x 219.1	500	254
12 x 10	323.9 x 273.0	500	254

SHIELD reserves the right to change the contents without notice • Please refer to UL/FM approvals for details.
Reducing tee SDG-55 threaded outlet are also available, contact Shield for details.

c UL us LISTED

Factory Mutual System

Shield Concentric Reducer



Grooved SDG-35 & Threaded SDG-37

Nominal Size Inch	Pipe O.D. mm	Maximum Working Pressure PSI	**SDG-35 Grooved** Dimensions E-E mm	**SDG-37 Threaded** Dimensions E-E mm
2 x 1 1/4	60.3 x 42.2	500	64	64
2 x 1 1/2	60.3 x 48.3	500	64	64
2 1/2 x 2	73.0 x 60.3	500	64	64
3 O.D x 2	76.1 x 60.3	500	64	64
3 x 1	88.9 x 33.4	500	64	64
3 x 1 1/2	88.9 x 48.3	500	64	64
3 x 2	88.9 x 60.3	500	64	64
3 x 2 1/2	88.9 x 73.0	500	64	64
3 x 3 O.D	88.9 x 76.1	500	64	64
4 x 1 1/4	114.3 x 42.2	500	76	76
4 x 1 1/2	114.3 x 48.3	500	76	76
4 x 2	114.3 x 60.3	500	76	76
4 x 2 1/2	114.3 x 73.0	500	76	76
4 x 3 O.D	114.3 x 76.1	500	76	76
4 x 3	114.3 x 88.9	500	76	76
5 1/2 O.D x 2	139.7 x 60.3	500	102	102
5 1/2 O.D x 3 O.D	139.7 x 76.1	500	102	102
5 1/2 O.D x 3	139.7 x 88.9	500	102	102
5 1/2 O.D x 4	139.7 x 114.3	500	102	102
6 1/2 O.D x 2	165.1 x 60.3	500	102	102
6 1/2 O.D x 3 O.D	165.1 x 76.1	500	102	102
6 1/2 O.D x 3	165.1 x 88.9	500	102	102
6 1/2 O.D x 4	165.1 x 114.3	500	102	102
6 1/2 O.D x 5 1/2 O.D	165.1 x 139.7	500	102	102

SHIELD reserves the right to change the contents without notice • Please refer to UL/FM approvals for details.

c UL us LISTED

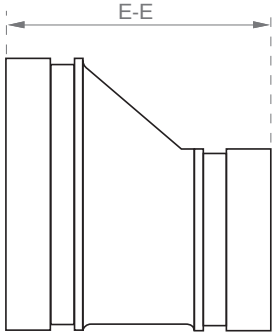
Factory Mutual System

Shield Concentric Reducer (Continued)

Grooved SDG-35 & Threaded SDG-37

Nominal Size Inch	Pipe O.D. mm	Maximum Working Pressure PSI	SDG-35 Grooved Dimensions E-E mm	SDG-37 Threaded Dimensions E-E mm
6 x 2	168.3 x 60.3	500	102	102
6 x 2 1/2	168.3 x 73.0	500	102	102
6 x 3 O.D	168.3 x 76.1	500	102	102
6 x 3	168.3 x 88.9	500	102	102
6 x 4	168.3 x 114.3	500	102	102
6 x 5 1/2 O.D	168.3 x 139.7	500	102	102
6 x 5	168.3 x 141.3	500	102	102
8 x 2 1/2	219.1 x 73.0	500	127	127
8 x 3	219.1 x 88.9	500	127	127
8 x 4	219.1 x 114.3	500	127	127
8 x 5 1/2 O.D	219.1 x 139.7	500	127	127
8 x 5	219.1 x 141.3	500	127	127
8 x 6 1/2 O.D	219.1 x 165.1	500	127	127
8 x 6	219.1 x 168.3	500	127	127
10 x 6 1/2 O.D	373.0 x 165.1	500	152	152
10 x 8	273.0 x 219.1	500	152	152
12 x 8	323.9 x 219.1	500	178	178
12 x 10	323.9 x 273.0	500	178	178
16 x 12	406.4 x 323.9	300	229	229
16 x 14	406.4 x 355.6	300	229	229
18 x 14	457.2 x 355.6	300	241	241
18 x 16	457.2 x 406.4	300	241	241

Shield Grooved Eccentric Reducer

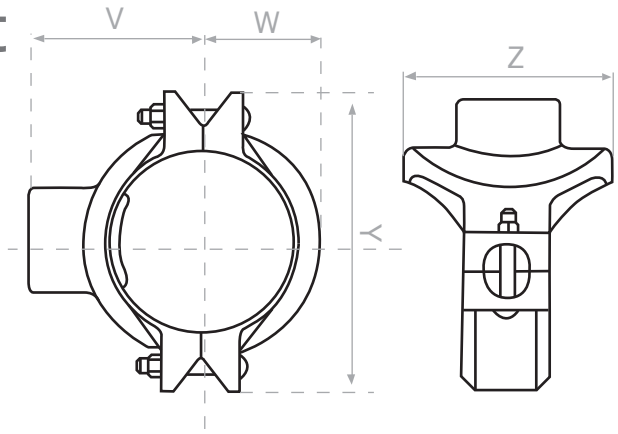


Grooved SDG-33

Nominal Size Grooved x Grooved Inch	Pipe O.D. mm	Maximum Working Pressure PSI	SDG-33 Grooved Dimensions E-E mm
4 x 3 O.D	114.3 x 76.1	500	102
4 x 3	114.3 x 88.9	500	102
5 1/2 O.D x 4	139.7 x 114.3	500	127
6 1/2 O.D x 3	165.1 x 88.9	500	140
6 1/2 O.D x 4	165.1 x 114.3	500	140
6 1/2 O.D x 5 1/2 O.D	165.1 x 139.7	500	140
8 x 4	219.1 x 114.3	500	215

SHIELD reserves the right to change the contents without notice • Please refer to UL/FM approvals for details.

Shield Threaded Outlet Mechanical Tee



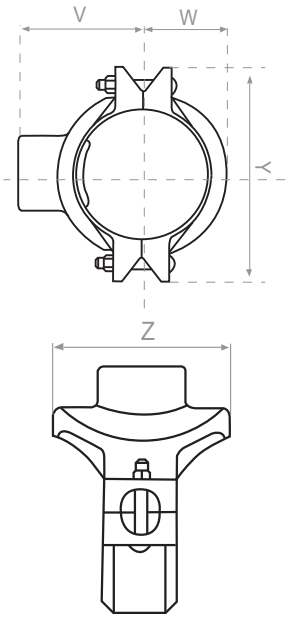
SDG-42

Nominal Size Run x Branch Inch	Pipe O.D. mm	Maximum Working Pressure PSI	Hole Dia +1.6 mm	Dimensions Y mm	Z mm	V mm	W mm	Bolt Size mm
2 x 1	60.3 x 33.4	300	38	116	68	60	39	3/8 x 55
2 x 1 1/4	60.3 x 42.2	300	45	116	76	62	39	3/8 x 55
2 x 1 1/2	60.3 x 48.3	300	45	116	76	62	39	3/8 x 55
2 1/2 x 3/4	73.0 x 26.9	300	38	144	70	69	49	1/2 x 60
2 1/2 x 1	73.0 x 33.4	300	38	144	70	69	49	1/2 x 60
2 1/2 x 1 1/4	73.0 x 42.2	300	51	144	84.5	73	49	1/2 x 60
2 1/2 x 1 1/2	73.0 x 48.3	300	51	144	84.5	73	49	1/2 x 60
3 O.D x 1	76.1 x 33.4	300	38	144	72.0	77.5	46.5	1/2 x 75
3 O.D x 1 1/4	76.1 x 42.2	300	51	144	84.5	77.5	46.5	1/2 x 75
3 O.D x 1 1/2	76.1 x 48.3	300	51	144	90.5	79.5	46.5	1/2 x 75
3 x 1	88.9 x 33.4	300	38	160	73.5	80	53.5	1/2x 75
3 x 1 1/4	88.9 x 42.2	300	51	160	85.5	80	53.5	1/2 x 75
3 x 1 1/2	88.9 x 48.3	300	51	160	90	80	53.5	1/2x 75
3 x 2	88.9 x 60.3	300	64	160	104	80	53.5	1/2 x 75
4 x 1/2	114.3 x 21.3	300	42	186	78.4	93	68	1/2 x 75
4 x 3/4	114.3 x 26.9	300	42	186	89.0	93	68	1/2 x 75
4 x 1	114.3 x 33.4	300	38	186	89.0	93	68	1/2 x 75
4 x 1 1/4	114.3 x 42.2	300	51	186	89.0	95	68	1/2 x 75
4 x 1 1/2	114.3 x 48.3	300	51	186	104.4	97	68	1/2 x 75
4 x 2	114.3 x 60.3	300	64	186	104.4	120	68	1/2x 75
4 x 2 1/2	114.3 x 73.0	300	70	186	124	100	68	1/2 x 75
4 x 3	114.3 x 88.9	300	89	208	96.5	100	68	1/2 x 75
5 1/2 O.D x 1	139.7 x 33.4	300	51	226	95	110	81	5/8 x 85
5 1/2 O.D x 1 1/4	139.7 x 42.2	300	51	226	95	114	81	5/8 x 85
5 1/2 O.D x 1 1/2	139.7 x 48.3	300	51	226	95	112	81	5/8 x 85
51/2 O.D x 2	139.7 x 60.3	300	70	226	114	114	81	5/8 x 85
5 1/2 O.D x 3 O.D	139.7 x 76.1	300	70	226	114	119	81	5/8 x 85
5 1/2 O.D x 3	139.7 x 88.9	300	89	226	136	122	81	5/8 x 85
5 x 1 1/4	141.3 x 42.2	300	51	226	98	110	81	5/8 x 85
6 1/2 O.D x 1/2	165.1 x 21.3	300	42	242	80.5	110	95	5/8 x 110
6 1/2 O.D x 3/4	165.1 x 26.9	300	42	242	80.5	110	95	5/8 x 110
6 1/2 O.D x 1	165.1 x 33.4	300	38	242	78.0	118	95	5/8 x 110
6 1/2 O.D x 1 1/4	165.1 x 42.2	300	51	242	93.0	118	95	5/8 x 110
6 1/2 O.D x 1 1/2	165.1 x 48.3	300	51	242	93.0	118	95	5/8 x 110
6 1/2 O.D x 2	165.1 x 60.3	300	64	242	112	128.5	95	5/8 x 110
6 1/2 O.D x 3 O.D	165.1 x 76.1	300	70	242	112	128	95	5/8 x 110

Shield Mechanical Tees allow a direct branch connection to be made on a pipe run where sufficient space allows a hole to be cut. Material: Ductile Iron ASTM A536. Gasket material EPDM. Threads are avaialble to BSPT or NPT and can be supplied in red coating or hot dipped galvanized.

SHIELD reserves the right to change the contents without notice.

SDG-42 (Continued)



Nominal Size Run x Branch Inch	Pipe O.D. mm	Maximum Working Pressure PSI	Hole Dia +1.6 mm	Dimensions Y mm	Z mm	V mm	W mm	Bolt Size mm
6 1/2 O.D x 3	165.1 x 88.9	300	89	242	132	128.5	95	5/8 x 110
6 1/2 O.D x 4	165.1 x 114.3	300	114	242	157	141	95	5/8 x 110
6 x 1 1/4	168.3 x 42.4	300	51	240	92.5	115	96.5	5/8 x 105
6 x 1 1/2	168.3 x 48.3	300	51	240	92.5	115	96.5	5/8 x 105
6 x 2	168.3 x 60.3	300	64	246	114	135	98.5	5/8 x 110
6 x 2 1/2	168.3 x 73.0	300	70	246	115	134	98.5	5/8 x 110
6 x 4	168.3 x 114.3	300	114	246	157	141	98.5	5/8 x 110
8 x 1	219.0 x 33.4	300	51	320	96.5	150	123	3/4 x 115
8 x 1 1/4	219.1 x 42.2	300	51	320	96.5	150	123	3/4 x 115
8 x 1 1/2	219.1 x 48.3	300	51	320	96.5	150	123	3/4 x 115
8 x 2	219.1 x 60.3	300	70	320	118	158.5	123	3/4 x 115
8 x 2 1/2	219.1 x 73.0	300	70	320	118	158.5	123	3/4 x 115
8 x 3	219.1 x 88.9	300	89	320	142	161	123	3/4 x 115
8 x 4	219.1 x 114.3	300	114	320	170	170	123	3/4 x 115

SHIELD reserves the right to change the contents without notice.

Factory Mutual System

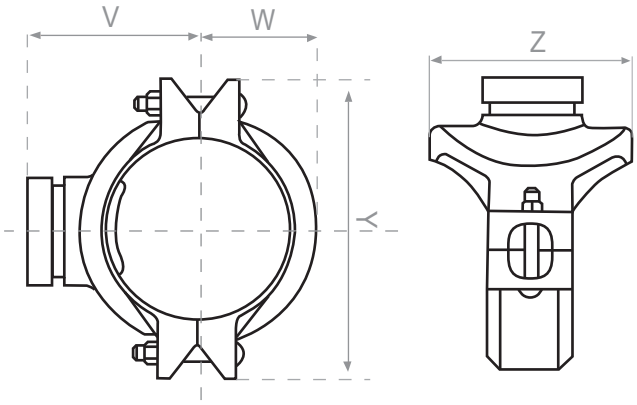
The mechanical tee and cross features a gap between the bolt pads. Do not attempt to bring bolt pads together which would result in metal to metal when tightening bolts and nuts. Note that excessive torque may cause joint failure - the following table provides recommended bolt fastening torque.

Bolt Size	Recommended Bolt Torque N - m
3/8"	40 ~ 60
1/2"	110 ~ 135
5/8"	135 ~ 175
3/4"	175 ~ 245
7/8"	245 ~ 325

c UL us LISTED

Factory Mutual System

Grooved Outlet Mechanical Tee



SDG-44

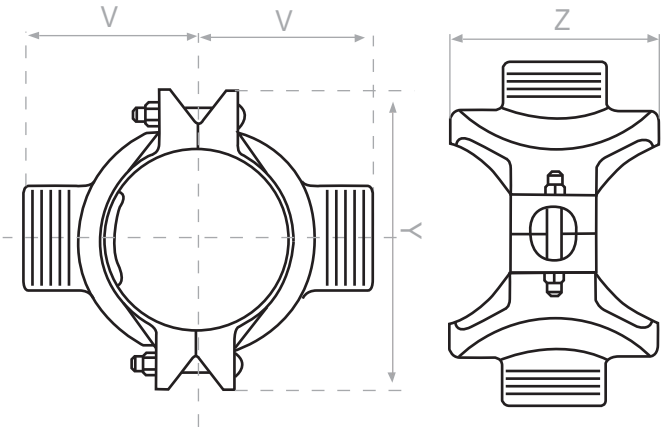
Nominal Size Run x Branch Inch	Pipe O.D. mm	Maximum Working Pressure PSI	Hole Dia +1.6 mm	Dimensions Y mm	Z mm	V mm	W mm	Bolt Size mm
2 1/2 x 1 1/4	73.0 x 42.2	300	51	144	84.5	75	49	1/2 x 60
3 x 2	88.9 x 60.3	300	64	160	104	92	53.5	1/2 x 75
4 x 2	114.3 x 60.3	300	64	186	104.4	101.5	68	1/2 x 75
4 x 2 1/2	114.3 x 73.0	300	70	186	104.4	101.5	68	1/2 x 75
4 x 3 O.D	114.3 x 76.1	300	70	186	104.4	101.5	68	1/2 x 75
4 x 3	114.3 x 88.9	300	89	186	124	101.5	68	1/2 x 75
5 1/2 O.D x 2	139.7 x 60.3	300	70	226	114	119	81	5/8 x 85
5 1/2 O.D x 3 O.D	139.7 x 76.1	300	70	226	114	119	81	5/8 x 85
5 1/2 O.D x 3	139.7 x 88.9	300	89	226	136	122	81	5/8 x 85
6 1/2 O.D x 2	165.1 x 60.3	300	64	242	112	127.5	95	5/8 x 110
6 1/2 OD x 3 O.D	165.1 x 76.1	300	70	242	112	127.5	95	5/8 x 110
6 1/2 O.D x 3	165.1 x 88.9	300	89	242	142.6	141	95	5/8 x 110
6 1/2 O.D x 4	165.1 x 114.3	300	114	242	157	141	95	5/8 x 110
6 x 2	168.3 x 60.3	300	64	246	114	134	98.5	5/8 x 110
6 x 4	168.3 x 114.3	300	114	246	157	142	98.5	5/8 x 110
8 x 2	219.1 x 60.3	300	70	320	118	158	123	3/4 x 115
8 x 3 O.D	219.1 x 76.1	300	70	320	118	158	123	3/4 x 115
8 x 3	219.1 x 88.9	300	89	320	142	161	123	3/4 x 115
8 x 4	219.1 x 114.3	300	114	320	170	162	123	3/4 x 115

SHIELD reserves the right to change the contents without notice.

c UL us LISTED

Factory Mutual System

Shield Threaded Mechanical Cross



SDG-47

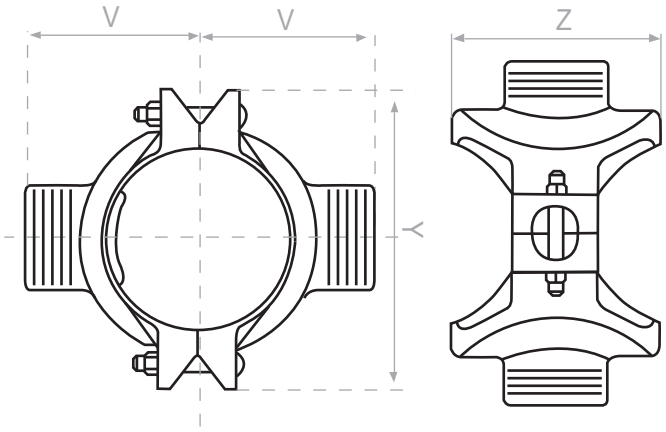
Nominal Size Run x Branch Inch	Pipe O.D. mm	Maximum Working Pressure PSI	Hole Dia +1.6 mm	Dimensions Y mm	Dimensions Z mm	Dimensions V mm	Bolt Size mm
2 x 1	60.3 x 33.4	300	38	116	68	60	3/8 x 55
2 x 1 1/4	60.3 x 42.2	300	45	116	76	62	3/8 x 55
2 x 1 1/2	60.3 x 48.3	300	45	116	76	62	3/8 x 55
2 1/2 x 3/4	73.0 x 26.9	300	38	144	70	69	1/2 x 75
2 1/2 x 1	73.0 x 33.4	300	38	144	70	69	1/2 x 75
2 1/2 x 1 1/4	73.0 x 42.2	300	51	144	84.5	73	1/2 x 75
2 1/2 x 1 1/2	73.0 x 48.3	300	51	144	84.5	73	1/2 x 75
3 O.D x 1	76.1 x 33.4	300	38	144	72.0	77.5	1/2 x 75
3 O.D x 1 1/4	76.1 x 42.2	300	51	144	84.5	77.5	1/2 x 75
3 O.D x 1 1/2	76.1 x 48.3	300	51	144	90.5	79.5	1/2 x 75
3 x 1	88.9 x 33.4	300	51	160	73.5	80	1/2 x 75
3 x 1 1/4	88.9 x 42.2	300	51	160	85.5	80	1/2 x 75
3 x 1 1/2	88.9 x 48.3	300	51	160	90	80	1/2 x 75
3 x 2	88.9 x 60.3	300	64	160	104	80	1/2 x 75
4 x 1/2	114.3 x 21.3	300	42	186	78.4	93	1/2 x 75
4 x 3/4	114.3 x 26.9	300	42	186	78.4	93	1/2 x 75
4 x 1	114.3 x 33.4	300	38	186	89.0	93	1/2 x 75
4 x 1 1/4	114.3 x 42.2	300	51	186	87.9	95	1/2 x 75
4 x 1 1/2	114.3 x 48.3	300	51	186	89	97	1/2 x 75
4 x 2	114.3 x 60.3	300	64	186	104.4	100	1/2 x 75
4 x 2 1/2	114.3 x 73.0	300	70	186	104.4	100	1/2 x 75
4 x 3 O.D	114.3 x 76.1	300	70	186	104.4	100	1/2 x 75
4 x 3	114.3 x 88.9	300	89	186	124	100	1/2 x 75
5 1/2 O.D x 1	139.7 x 33.4	300	51	226	95	110	5/8 x 85
5 1/2 O.D x 1 1/4	139.7 x 42.2	300	51	226	95	114	5/8 x 85
5 1/2 O.D x 1 1/2	139.7 x 48.3	300	51	226	95	112	5/8 x 85
5 1/2 O.D x 2	139.7 x 60.3	300	70	226	114	114	5/8 x 85
5 1/2 O.D x 3 O.D	139.7 x 76.1	300	70	226	114	119	5/8 x 85
6 1/2 O.D x 3/4	165.1 x 26.9	300	42	242	80.5	120	5/8 x 110
6 1/2 O.D x 1	165.1 x 33.4	300	38	242	78	118	5/8 x 110
6 1/2 O.D x 1 1/4	165.1 x 42.2	300	51	242	93	118	5/8 x 110
6 1/2 O.D x 1 1/2	165.1 x 48.2	300	51	242	93	118	5/8 x 110
6 1/2 O.D x 2	165.1 x 60.3	300	64	242	112	128.5	5/8 x 110
6 1/2 O.D x 3 O.D	165.1 x 76.1	300	70	242	112	128.5	5/8 x 110
6 x 2	168.3 x 60.3	300	64	246	114	135	5/8 x 110
6 x 2 1/2	168.3 x 73.0	300	70	246	115	134	5/8 x 110
8 x 1	219.1 x 33.4	300	51	320	96.5	150	5/8 x 110
8 x 1 1/4	219.0 x 42.2	300	51	320	96.5	150	3/4 x 115
8 x 1 1/2	219.1 x 48.3	300	51	320	96.5	150	3/4 x 115
8 x 2	219.1x60.3	300	70	320	118	150	3/4 x 115
8 x 3 O.D	219.1x76.1	300	70	320	118	158.5	3/4 x 115

SHIELD reserves the right to change the contents without notice.

c UL us LISTED

Factory Mutual System

Shield Grooved Mechanical Cross



SDG-49

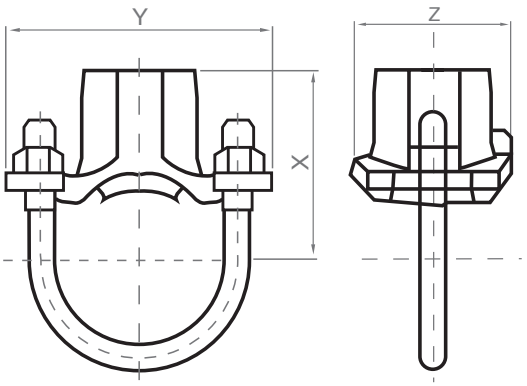
Nominal Size Run x Branch Inch	Pipe O.D. mm	Maximum Working Pressure PSI	Hole Dia +1.6 mm	Dimensions Y mm	Z mm	V mm	Bolt Size mm
2 1/2 x 1 1/4	73.0 x 42.2	300	51	144	84.5	75	1/2 x 60
3 x 2	88.9 x 60.3	300	64	160	104	92	1/2 x 75
4 x 2	114.3 x 60.3	300	64	186	104.4	101.5	1/2 x 75
4 x 2 1/2	114.3 x 73.0	300	70	186	104.4	101.5	1/2 x 75
4 x 3 O.D	114.3 x 76.1	300	70	186	104.4	101.5	1/2 x 75
4 x 3	114.3 x 88.9	300	89	186	124	101.5	1/2 x 75
5 1/2 O.D x 2	139.7 x 60.3	300	70	226	114	119	5/8 x 85
5 1/2 O.D x 3 O.D	139.7 x 76.1	300	70	226	114	119	5/8 x 85
5 1/2 O.D x 3	139.7 x 88.9	300	89	226	136	122	5/8 x 85
6 1/2 O.D x 2	165.1 x 60.3	300	64	242	112	127.5	5/8 x 110
6 1/2 O.D x 3 O.D	165.1 x 76.1	300	70	242	112	127.5	5/8 x 110
6 1/2 O.D x 3	165.1 x 88.9	300	89	242	142.6	141	5/8 x 110
6 1/2 O.D x 4	165.1 x 114.3	300	114	242	157	141	5/8 x 110
6 x 2	168.3 x 60.3	300	64	246	114	134	5/8 x 110
6 x 4	168.3 x 114.3	300	114	246	157	142	5/8 x 110
8 x 2	219.1 x 60.3	300	70	320	118	158	3/4 x 115
8 x 3 O.D	219.1 x 76.1	300	70	320	118	158	3/4 x 115
8 x 3	219.1 x 88.9	300	89	320	142	161	3/4 x 115
8 x 4	219.1 x 114.3	300	114	320	170	162	3/4 x 115

SHIELD reserves the right to change the contents without notice.

c UL us LISTED

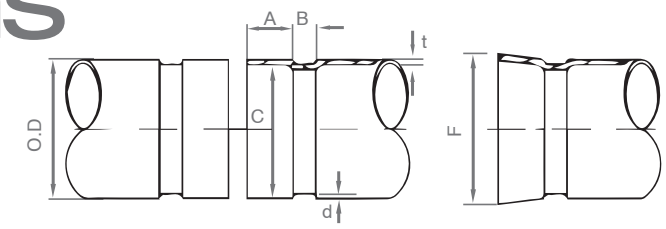
Factory Mutual System

Shield U-Bolt Mechanical Tee SDG-40



Nominal Size Inch	Hole Dia +1.6 mm	Maximum Working Pressure PSI	Dimensions X mm	Dimensions Y mm	Dimensions Z mm	U Bolt Size mm
1 1/4 x 1/2	30	300	53.0	89.0	56.0	3/8 x 60
1 1/4 x 3/4	30	300	53.0	89.0	56.0	3/8 x 60
1 1/4 x 1	30	300	56.0	89.0	56.0	3/8 x 60
1 1/2 x 1/2	30	300	55.0	89.0	56.0	3/8 x 67
1 1/2 x 3/4	30	300	55.0	89.0	56.0	3/8 x 67
1 1/2 x 1	30	300	58.0	89.0	56.0	3/8 x 67
2 x 1/2	30	300	64.0	98.0	56.0	3/8 x 82
2 x 3/4	30	300	64.0	98.0	56.0	3/8 x 82
2 x 1	30	300	67.0	98.0	56.0	3/8 x 82
2 1/2 x 1/2	30	300	69.0	111.0	56.0	3/8 x 95
2 1/2 x 3/4	30	300	69.0	111.0	56.0	3/8 x 95
2 1/2 x 1	30	300	72.0	111.0	56.0	3/8 x 95

Shield Groove Specifications



Nominal Size Inch	Pipe Outside Diameter Actual Inch	Tolerance (+) Inch	Tolerance (-) Inch	Gasket Seat 'A' (+/-)0.030 Inch	Groove Diameter 'C' Maximum Inch	Groove Diameter 'C' Tolerance (+)0.000	Groove Width 'B' Roll Groove (+/-)0.030	Groove Width 'B' Cut Groove (+/-)0.031	Groove Depth 'd'	Minimum Pipe Wall Thickness 't' Roll Groove	Minimum Pipe Wall Thickness 't' Cut Groove	Max 'F' Flare Dia. Roll Groove
1 1/4	1.660	0.016	0.016	0.625	1.535	-0.015	0.281	0.312	0.063	0.065	0.140	1.77
1 1/2	1.900	0.019	0.019	0.625	1.775	-0.015	0.281	0.312	0.063	0.065	0.140	2.01
2	2.375	0.024	0.024	0.625	2.250	-0.015	0.344	0.312	0.063	0.065	0.154	2.48
2 1/2	2.875	0.029	0.029	0.625	2.720	-0.018	0.344	0.312	0.078	0.083	0.187	2.98
3 OD	3.000	0.030	0.030	0.625	2.845	-0.018	0.344	0.312	0.078	0.083	0.188	3.10
3	3.500	0.035	0.031	0.625	3.344	-0.018	0.344	0.312	0.078	0.083	0.188	3.60
4	4.500	0.045	0.031	0.625	4.334	-0.020	0.344	0.312	0.083	0.083	0.203	4.60
5 1/2 OD	5.500	0.056	0.031	0.625	5.334	-0.020	0.344	0.375	0.083	0.109	0.203	5.60
5	5.563	0.056	0.031	0.625	5.395	-0.022	0.344	0.375	0.084	0.109	0.203	5.66
6	6.625	0.063	0.031	0.625	6.445	-0.022	0.344	0.375	0.085	0.109	0.219	6.73
8	8.625	0.063	0.031	0.750	8.441	-0.025	0.469	0.375	0.092	0.109	0.238	8.80
10	10.750	0.063	0.031	0.750	10.562	-0.027	0.469	0.500	0.094	0.134	0.250	10.92
12	12.750	0.063	0.031	0.750	12.531	-0.030	0.469	0.500	0.109	0.156	0.279	12.92

• SHIELD reserves the right to change the contents without notice.

c UL us LISTED

Factory Mutual System

Shield Swivel Ring Hanger

Model : SD-HB

FUNCTION

Designed for the suspension of non-insulated stationary pipe lines. The insert nut allows a vertical adjustment after installation, is tapped to NFPA reduced rod size standards. SD-HBF has a layer of felt which separates the pipe from the hanger to reduce vibration and sound.

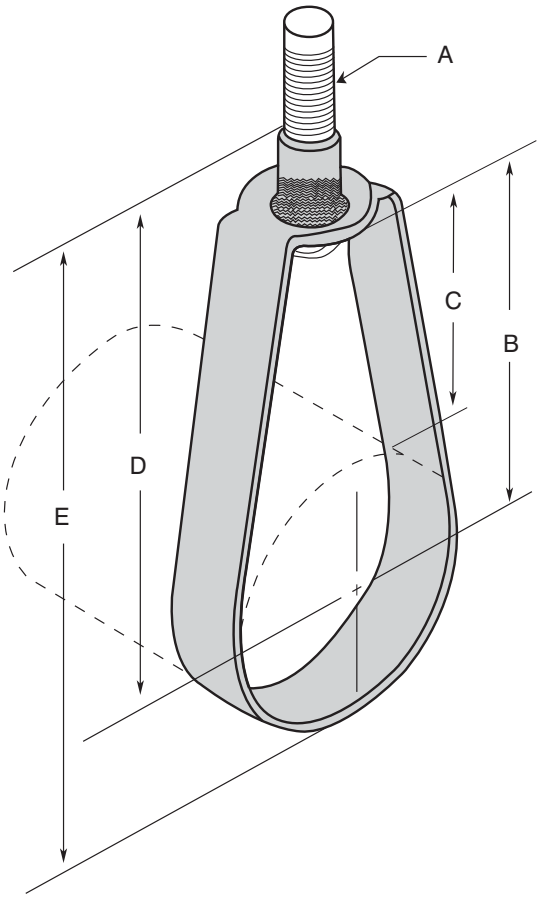
APPROVALS

Underwriters' Laboratories listed and Factory Mutual approved ¾″ to 8″ sizes. Complies with Federal Specification WW-H-171E & A-A-1192 (Type 10), and Manufacturers' Standardization Society MSS SP-69 & SP-58 (Type 10).

Material : Low Carbon Steel to ASTM A653

Nut : Electro Galvanized to ASTM B633

Finishing : Galvanized



SD-HB

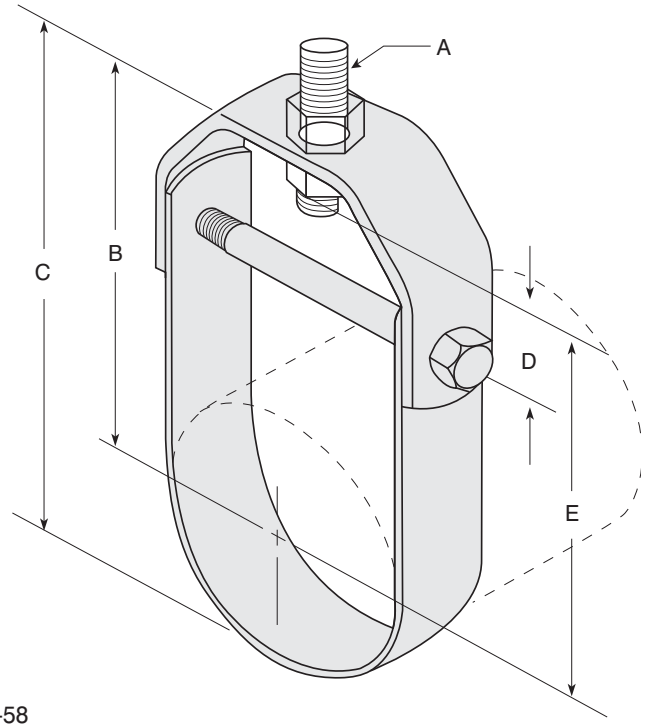
Pipe Size	Rod Size A	B	Adj. C	D	E	Max. Rec. Load/lbs.
1/2	3/8	1 7/8	1 7/16	2 3/4	3 1/16	300
3/4	3/8	1 11/16	1 1/8	2 1/2	3 1/16	300
1	3/8	1 5/8	1	2 1/2	3 3/16	300
1 1/4	3/8	1 15/16	1 1/16	2 13/16	3 9/16	300
1 1/2	3/8	2 1/8	1 1/16	3 1/8	3 7/8	300
2	3/8	2 7/16	1 1/8	3 5/16	4 3/8	300
2 1/2	3/8	2 3/4	1 1/4	3 11/16	5	525
3	3/8	2 7/8	1 1/8	3 3/4	5 9/16	525
3 1/2	3/8	3 3/8	1 3/8	4 5/16	6 5/16	525
4	3/8	3 7/8	1 1/2	4 1/2	7	650
5	1/2	4 5/8	1 5/8	5 5/8	8 3/8	1000
6	1/2	5 5/8	2 1/4	6 1/2	9 13/16	1000
8	1/2	6 13/16	2 7/16	7 15/16	12 1/4	1000

Note: a) Swivel Nut is coming along with hanger
b) Swivel Nut is available for 10mm and 12mm Rod size
c) Hot Dipped Galvanized can be supplied upon request

c UL us LISTED Factory Mutual System

Shield Clevis Hanger

Model : SD-HC



FUNCTION

Designed for the suspension of non-insulated stationary pipe lines. SD-HCF has a layer of felt which separates the pipe from the hanger to reduce vibration and sound. The PVC coating on SD-HC protects the pipe from the metal surface of the hanger.

APPROVALS

Underwriters' Laboratories listed and Factory Mutual approved for 2 1/2" upto 8" pipe. Complies with Federal Specification WW-H-171E & A-A-1192A (Type 1) and Manufacturers' Standardization Society MSS SP-69 & SP-58 (Type 1).

Material : Low Carbon Steel

Finishing : Galvanized to ASTM B633

SD-HC

Pipe Size	Rod Size A	Adj. B	Adj. C	Adj. D	Adj. E	Cross Bolt	Max. Rec. Load/lbs.
1/2	3/8	2 7/16	2 7/8	1 1/8	2	1/4	610
3/4	3/8	2 5/8	3 1/8	1 1/4	2 3/16	1/4	610
1	3/8	3 1/16	3 3/4	1 5/8	2 5/8	1/4	610
1 1/4	3/8	3 3/8	4 3/16	1 5/8	2 15/16	1/4	610
1 1/2	3/8	3 1/2	4 7/16	1 1/2	3 1/16	1/4	610
2	3/8	3 3/4	5	1 5/8	3 5/16	1/4	610
2 1/2	1/2	3 7/8	5 3/8	1 1/8	3 1/4	3/8	1130
3	1/2	4 1/4	6	1 1/8	3 5/8	3/8	1130
3 1/2	1/2	4 1/2	6 1/2	1 1/4	3 7/8	3/8	1130
4	5/8	5 1/2	7 11/16	1 3/4	4 11/16	3/8	1430
5	5/8	6 1/8	9 1/8	1 7/8	5 5/16	1/2	1430
6	3/4	6 7/8	10 1/8	1 5/8	6	1/2	1940
8	7/8	8 3/4	12 7/8	2 1/8	7 7/8	5/8	2000
10	7/8	9 1/4	14 5/8	1 3/4	8 1/8	3/4	3600
12	7/8	11 5/8	18	2 1/2	10 1/2	3/4	3800
14	1	12 3/4	19 3/4	2 5/8	11 1/4	7/8	4200
16	1	14 1/8	22 1/8	2 5/8	13 5/8	1	4600
18	1 1/8	16 1/2	25 1/2	3 1/2	15	1 1/8	4800
20	1 1/4	18	28	4 1/8	16 1/8	1 1/4	4800
24	1 1/4	20 1/4	32 1/4	4 3/4	18 3/8	1 1/4	4800
30	1 1/4	24 1/2	38 7/8	5 1/2	21 1/2	1 1/4	6000
36	1 1/2	32	50	8 3/4	30	1 1/2	9500

Note: a) Use of an upper locknut ensures proper performance. Pipe spacers provided on 30″ and larger clevises. If ordering SD-HCF felt lined hangers for pipe size of 3½″ or under, order the next largest size to allow for the thickness of the felt lining.

b) "D" Adjustment (Top of cross bolt to bottom of hanger rod nut).

c) When an over-sized clevis is used, a pipe spacer should be placed over the clevis bolt to prevent the lower U-strap from moving inward.

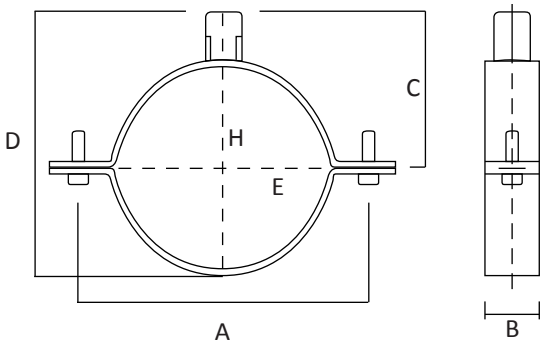
d) Hot Dipped Galvanized to ASTM A123 can be supplied upon request.

c UL us LISTED

Factory Mutual System

Shield Pipe Clamp With Lining

Model : SD-GE-RLC



Features:

- Designed for Horizontal, vertical and suspended installations.
- Suitable for Steel, copper and PVC pipes.
- Welded Nut M8/M10 with option of M10/M12.
- Connection thread with M8/M10 dual-tapped boss.
- Side Screw: 6 x 20 – Phillip head with vicer.
- High rigidity due to reinforcing rib.
- With highly elastic vibration control lining, vibration control tested.

Material: Mild Steel & EPDM Rubber.

Finishing: Electro galvanized as per ASTM B633 Standards.

Model No	Size	Pipe O.D	Dimensions						Maximum Load
	Inch	mm	H mm	E mm	A mm	B mm	C mm	D mm	Kg
SD-GE-RLC ⅜	⅜"	17.1	15	19	59	20	23	30	450
SD-GE-RLC ½	½"	21.3	20	25	66	20	26	37	450
SD-GE-RLC ¾	¾"	26.7	26	30	72	20	29	43	450
SD-GE-RLC 1	1"	33.4	32	36	79	20	33	50	450
SD-GE-RLC 1¼	1¼"	42.2	38	43	86	20	36	57	450
SD-GE-RLC 1½	1½"	48.3	47	51	92	20	39	63	450
SD-GE-RLC 1½-54	-	54.0	53	58	98	20	42	69	450
SD-GE-RLC 2	2"	60.3	60	64	104	20	45	75	450
SD-GE-RLC 2-63	-	63.0	63	66	108	20	47	72	450
SD-GE-RLC 2-70	-	70.0	68	72	114	20	50	85	450
SD-GE-RLC 2½	2½"	73.0	74	80	119	20	53	90	600
SD-GE-RLC 2½-83	-	83.0	81	86	127	20	57	98	600
SD-GE-RLC 3	3"	88.9	87	92	134	20	60	105	600
SD-GE-RLC 3½	3½"	101.6	99	105	144	20	65	115	600
SD-GE-RLC 3½-110	-	110.0	107	112	164	20	70	125	600
SD-GE-RLC 4	4"	114.3	113	118	159	20	73	130	600
SD-GE-RLC 4-125	-	125.0	125	130	169	20	78	140	600
SD-GE-RLC 4-133	-	133.0	131	137	177	20	82	148	600
SD-GE-RLC 5	5"	141.3	138	142	184	20	85	155	600
SD-GE-RLC 5-150	-	150.0	148	153	194	20	90	165	600
SD-GE-RLC 5-160	-	160.0	159	166	204	25	95	175	600
SD-GE-RLC 6	6"	168.3	168	172	212	25	99	183	600
SD-GE-RLC 6-210	-	210.0	200	212	244	25	115	215	950
SD-GE-RLC 8	8"	219.1	215	220	264	25	125	235	950
SD-GE-RLC 10	10"	273.0	269	274	294	25	140	265	950
SD-GE-RLC 12	12"	323.8	313	318	367	25	177	339	1200

Notes:
- Measurements are subject to 5% tolerance.
- Other Sizes available on request.
- Hot Dipped Galvanized can be supplied upon request.
- SHIELD reserves the right to change the contents without notice.

Shield
Pipe Clamp With Lining

Model : SD-GE-RLC

Selection of Lined Pipe Hangers for Different Types of Pipes:

Model No	Copper	Steel (SCH 40)		UPVC / PE	ABS
	mm	Inch	mm		
SD-GE-RLC ⅜	15, 18	-	16	-	-
SD-GE-RLC ½	22	½"	22	20	DN15 (21.4)
SD-GE-RLC ¾	24, 28	¾"	28	25	DN20 (26.8)
SD-GE-RLC 1	35	1"	35	32, 38	DN25 (33.6)
SD-GE-RLC 1¼	42	1¼"	42	40, 43	DN32 (42.3)
SD-GE-RLC 1½	-	1½"	48	45	DN40 (48.3)
SD-GE-RLC 1½-54	54	-	-	54	-
SD-GE-RLC 2	64	2"	60	60	DN50 (60.4)
SD-GE-RLC 2-63	-	-	-	-	-
SD-GE-RLC 2-70	67, 70	-	-	70	-
SD-GE-RLC 2½	76	2½"	75	75	DN65 (75.4)
SD-GE-RLC 2½-83	80	-	-	83	-
SD-GE-RLC 3	-	3"	90	90	-
SD-GE-RLC 3½	102, 105	-	-	102	DN80 (88.9)
SD-GE-RLC 3½-110	108	-	-	110	-
SD-GE-RLC 4	-	4"	115	115	DN100 (114.3)
SD-GE-RLC 4-125	125	-	-	125	-
SD-GE-RLC 4-133	-	-	-	135	-
SD-GE-RLC 5	-	5"	140	140	DN125 (21.4)
SD-GE-RLC 5-150	-	-	-	152	-
SD-GE-RLC 5-160	159	-	-	160	-
SD-GE-RLC 6	167	6"	168	-	DN150 (168.3)
SD-GE-RLC 6-210	206	-	-	200	-
SD-GE-RLC 8	-	8"	219	220, 225	DN200 (225.0)
SD-GE-RLC 10	-	-	-	250	DN225 (250.4)
SD-GE-RLC 12	-	-	-	-	DN300 (315.5)

Notes:

- Measurements are subject to 5% tolerance
- SHIELD reserves the right to change the contents without notice.

Shield
Pipe Clamp

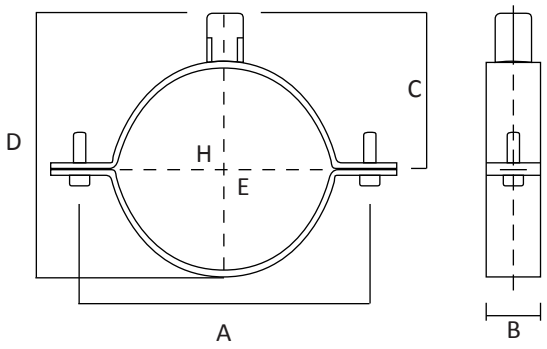
Model : SD-GE-PPC

Features:

- Designed for Horizontal, vertical and suspended installations.
- Welded Nut M8/M10 with option of M10/M12.
- High - Strength round welded connecting nuts.
- The two locking screws allow adjustment.
- Can be used as a pipe anchor point.
- Suitable for installations without vibration control requirements.

Material: Mild Steel.

Finishing: Electro galvanized as per ASTM B633 Standards.



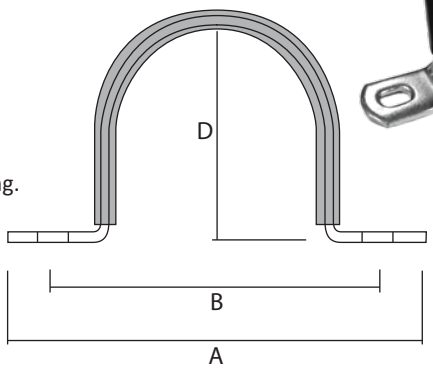
Model No	Size Inch	Pipe O.D mm	Dimensions						Maximum Load Kg
			H mm	E mm	A mm	B mm	C mm	D mm	
SD-GE-PPC ⅜	⅜"	17.1	15	19	59	20	23	30	450
SD-GE-PPC ½	½"	21.3	20	25	66	20	26	37	450
SD-GE-PPC ¾	¾"	26.7	26	30	72	20	29	43	450
SD-GE-PPC 1	1"	33.4	32	36	79	20	33	50	450
SD-GE-PPC 1 ¼	1¼"	42.2	38	43	86	20	36	57	450
SD-GE-PPC 1 ½	1½"	48.3	47	51	92	20	39	63	450
SD-GE-PPC 1 ½-54	-	54.0	53	58	98	20	42	69	450
SD-GE-PPC 2	2"	60.3	60	64	104	20	45	75	450
SD-GE-PPC 2-63	-	63.0	63	66	108	20	47	72	450
SD-GE-PPC 2-70	-	70.0	68	72	114	20	50	85	450
SD-GE-PPC 2 ½	2½"	73.0	74	80	119	20	53	90	600
SD-GE-PPC 2 ½-83	-	83.0	81	86	127	20	57	98	600
SD-GE-PPC 3	3"	88.9	87	92	134	20	60	105	600
SD-GE-PPC 3 ½	3½"	101.6	99	105	144	20	65	115	600
SD-GE-PPC 3 ½-110	-	110.0	107	112	164	20	70	125	600
SD-GE-PPC 4	4"	114.3	113	118	159	20	73	130	600
SD-GE-PPC 4-125	-	125.0	125	130	169	20	78	140	600
SD-GE-PPC 4-133	-	133.0	131	137	177	20	82	148	600
SD-GE-PPC 5	5"	141.3	138	142	184	20	85	155	600
SD-GE-PPC 5-150	-	150.0	148	153	194	20	90	165	600
SD-GE-PPC 5-160	-	160.0	159	166	204	25	95	175	600
SD-GE-PPC 6	6"	168.3	168	172	212	25	99	183	600
SD-GE-PPC 6-210	-	210.0	200	212	244	25	115	215	950
SD-GE-PPC 8	8"	219.1	215	220	264	25	125	235	950
SD-GE-PPC 10	10"	273.0	269	274	294	25	140	265	950
SD-GE-PPC 12	12"	323.8	313	318	367	25	177	339	1200

Notes:

- Measurements are subject to 5% tolerance
- Other Sizes available on request
- Hot Dipped Galvanized can be supplied upon request
- SHIELD reserves the right to change the contents without notice.

Shield
U Strap
Hanger with Lining

Model : SD-GE-RUS



Features:

- Designed for mount plain or insulated pipes.
- It can be used as a pipe anchor with Rubber Support Insert also.
- Vibration and Sound Control tested & verified with highly elastic lining.

Material: Mild Steel & EPDM Rubber

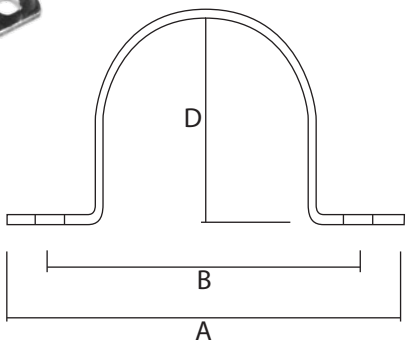
Finishing: Electro galvanized as per ASTM B 633 Standards

Model No	Pipe Size Inch	Pipe O.D mm	A mm	B mm	Width mm	Bolt Size	Maximum Load Kg
SD-GE-RUS ½	½"	21.3	76	51	20	M8	500
SD-GE-RUS ¾	¾"	26.7	82	57	20	M8	500
SD-GE-RUS 1	1"	33.4	89	64	20	M8	500
SD-GE-RUS 1¼	1¼"	42.2	96	71	20	M8	500
SD-GE-RUS 1½	1½"	48.3	102	77	20	M8	500
SD-GE-RUS 1½-54	-	54.0	108	83	20	M8	500
SD-GE-RUS 2	2"	60.3	114	89	20	M8	500
SD-GE-RUS 2-67	-	67.0	121	96	25	M8	500
SD-GE-RUS 2½	2½"	73.0	145	113	25	M8	600
SD-GE-RUS 2½-82	-	82.0	152	120	25	M8	600
SD-GE-RUS 3	3"	88.9	160	128	25	M8	600
SD-GE-RUS 3½	3½"	101.6	170	138	25	M8	600
SD-GE-RUS 3½-110	-	108.0	178	146	25	M8	600
SD-GE-RUS 4	4"	114.3	185	153	25	M8	600
SD-GE-RUS 4-126	-	126.0	196	164	30	M8	600
SD-GE-RUS 5	5"	141.3	210	178	30	M10	600
SD-GE-RUS 5-148	-	148.0	218	186	30	M10	600
SD-GE-RUS 5-155	-	155.0	225	193	30	M10	600
SD-GE-RUS 6	6"	168.3	237	205	30	M10	600
SD-GE-RUS 6-179	-	179.0	249	217	30	M10	600
SD-GE-RUS 6-190	-	190.0	260	228	30	M10	800
SD-GE-RUS 6-205	-	205.0	275	243	30	M10	800
SD-GE-RUS 8	8"	219.1	289	257	30	M10	800
SD-GE-RUS 8-230	-	230.0	300	268	30	M10	800
SD-GE-RUS 8-241	-	241.0	332	291	30	M12	1250
SD-GE-RUS 8-263	-	263.0	354	313	30	M12	1250
SD-GE-RUS 10	10"	273.0	364	323	30	M18	1250
SD-GE-RUS 10-295	-	295.0	386	345	40	M18	1250

Notes:
- Measurements are subject to 5% tolerance.
- Other Sizes available on request.
- Hot Dipped Galvanized can be supplied upon request.
- SHIELD reserves the right to change the contents without notice.

Shield U Strap Hanger

Model : SD-GE-US



Features:

- Designed for mount plain or insulated pipes.
- U Strap Hangers can be used as a pipe anchor with rubber support inserts also.

Material: Mild Steel.

Finishing: Electrogalvanized as per ASTM B 633 Standards.

Model No	Paper Size Inch	Pipe O.D mm	A mm	B mm	Width mm	Bolt Size	Maximum Load Kg
SD-GE-US ½	½"	21.3	76	51	20	M8	500
SD-GE-US ¾	¾"	26.7	82	57	20	M8	500
SD-GE-US 1	1"	33.4	89	64	20	M8	500
SD-GE-US 1¼	1¼"	42.2	96	71	20	M8	500
SD-GE-US 1½	1½"	48.3	102	77	20	M8	500
SD-GE-US 1½-54	-	54.0	108	83	20	M8	500
SD-GE-US 2	2"	60.3	114	89	20	M8	500
SD-GE-US 2-67	-	67.0	121	96	25	M8	500
SD-GE-US 2½	2½"	73.0	145	113	25	M8	600
SD-GE-US 2½-82	-	82.0	152	120	25	M8	600
SD-GE-US 3	3"	88.9	160	128	25	M8	600
SD-GE-US 3½	3½"	101.6	170	138	25	M8	600
SD-GE-US 3½-108	-	108.0	178	146	25	M8	600
SD-GE-US 4	4"	114.3	185	153	25	M8	600
SD-GE-US 4-126	-	126.0	196	164	30	M8	600
SD-GE-US 5	5"	141.3	210	178	30	M10	600
SD-GE-US 5-148	-	148.0	218	186	30	M10	600
SD-GE-US 5-155	-	155.0	225	193	30	M10	600
SD-GE-US 6	6"	168.3	237	205	30	M10	600
SD-GE-US 6-179	-	179.0	249	217	30	M10	600
SD-GE-US 6-190	-	190.0	260	228	30	M10	800
SD-GE-US 6-205	-	205.0	275	243	30	M10	800
SD-GE-US 8	8"	219.1	289	257	30	M10	800
SD-GE-US 8-230	-	230.0	300	268	30	M10	800
SD-GE-US 8-241	-	241.0	332	291	30	M12	1250
SD-GE-US 8-263	-	263.0	354	313	30	M12	1250
SD-GE-US 10	10"	273.0	364	323	30	M18	1250
SD-GE-US 10-295	-	295.0	386	345	40	M18	1250

Notes:

- Measurements are subject to 5% tolerance.
- Other Sizes available on request.
- Hot Dipped Galvanized can be supplied upon request.
- SHIELD reserves the right to change the contents without notice.

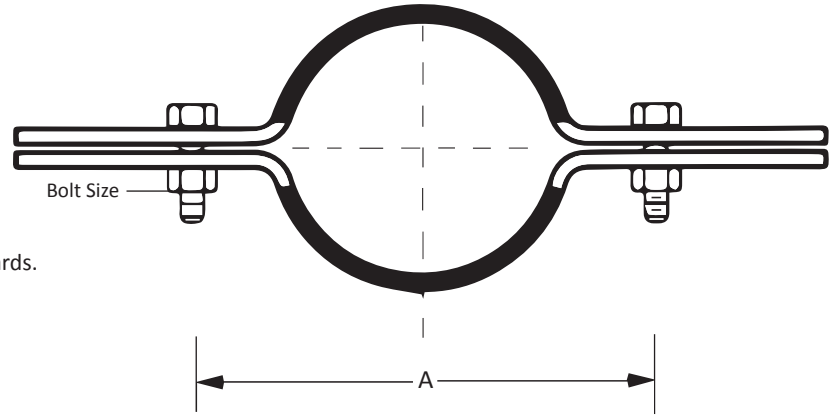
Shield Riser Hanger or Clamp with Lining

Model : SD-GE-RRC

Features:

Designed to act as a rigid support / guide for vertical pipes to control the suspension in pipeline.
Equallly useable in most of the pipe types.

- Strengthened bolts for high load capacity.
- Highly elastic lining for sound and vibrations control.
- Manufactured as per MSS-SP58 - 2002 - Type 8.



Material: Mild Steel & EPDM Rubber

Finishing: Electrogalvanized as per ASTM B633 Standards.

Model No	Pipe Size Inch	Pipe O.D mm	A mm	Bolt Size	Maximum Load Kg
SD-GE-RRC ½	½"	21.3	57	M10	1250
SD-GE-RRC ¾	¾"	26.7	68	M10	1250
SD-GE-RRC 1	1"	33.4	76	M10	1250
SD-GE-RRC 1¼	1¼"	42.2	90	M10	1250
SD-GE-RRC 1½	1½"	48.3	110	M10	1250
SD-GE-RRC 2	2"	60.3	130	M10	1850
SD-GE-RRC 2½	2½"	73.0	142	M12	1850
SD-GE-RRC 3	3"	88.9	161	M12	2250
SD-GE-RRC 4	4"	114.3	190	M12	3600
SD-GE-RRC 6	6"	168.3	258	M16	4500
SD-GE-RRC 8	8"	219.1	333	M16	4500
SD-GE-RRC 10	10"	273.0	409	M16	5800
SD-GE-RRC 12	12"	323.8	467	M20	7300

Notes:

- Measurements are subject to 5% tolerance.
- Other Sizes available on request.
- Hot Dipped Galvanized can be supplied upon request.
- SHIELD reserves the right to change the contents without notice.

Shield Riser Hanger or Clamp

Model : SD-GE-PRC

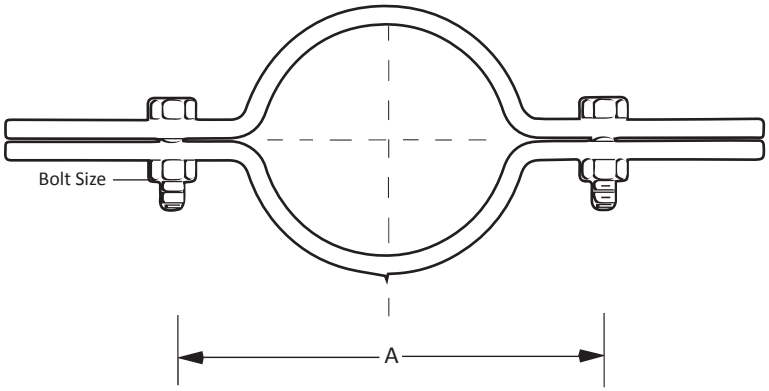
Features:

Designed to act as a rigid support for vertical pipes to control the suspension in pipeline. Equallly useable in most of the pipe types.

- Strengthened bolts for high load capacity.
- Manufactured as per MSS-SP58 - 2002 - Type 8.

Material: Mild Steel

Finishing: Electrogalvanized as per ASTM B633 Standards.

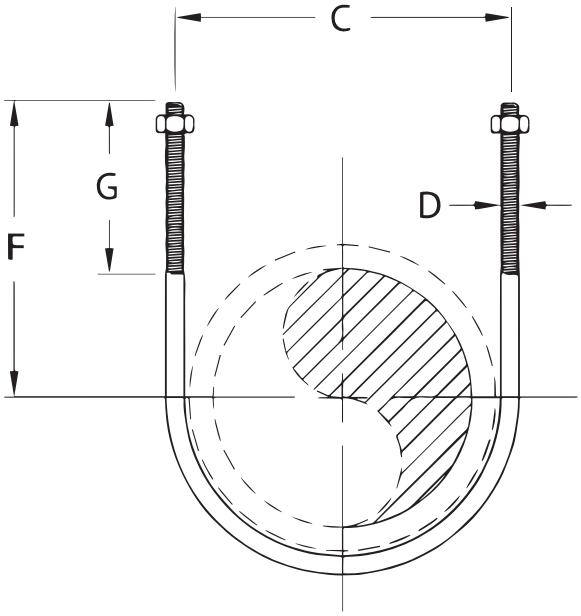


Model No	Pipe Size Inch	Pipe O.D mm	A mm	Bolt Size	Maximum Load Kg
SD-GE-PRC ½	½"	21.3	57	M10	1250
SD-GE-PRC ¾	¾"	26.7	68	M10	1250
SD-GE-PRC 1	1"	33.4	76	M10	1250
SD-GE-PRC 1¼	1¼"	42.2	90	M10	1250
SD-GE-PRC 1½	1½"	48.3	110	M10	1250
SD-GE-PRC 2	2"	60.3	130	M10	1850
SD-GE-PRC 2½	2½"	73.0	142	M12	1850
SD-GE-PRC 3	3"	88.9	161	M12	2250
SD-GE-PRC 4	4"	114.3	190	M12	3600
SD-GE-PRC 6	6"	168.3	258	M16	4500
SD-GE-PRC 8	8"	219.1	333	M16	4500
SD-GE-PRC 10	10"	273.0	409	M16	5800
SD-GE-PRC 12	12"	323.8	467	M20	7300

Notes:

- Measurements are subject to 5% tolerance.
- Other Sizes available on request.
- Hot Dipped Galvanized can be supplied upon request.
- SHIELD reserves the right to change the contents without notice.

Shield U-Bolt



Model : SD-UB

Featuress:

- Designed to use as a support, anchor or guide for various types of pipes.
- High load capacity due to one piece design.
- Supplied with two Nuts & Washers.
- Special U bolts with Longer Tangents and Threads can be furnished upon request.

Material: Mild Steel

Finishing: Electro galvanized as per ASTM B 633 Standards.

Model No	Nominal Pipe Size Inch	Dimensions			
		D mm	C mm	F mm	G mm
SD-UB ½	½"	M8	31	35	35
SD-UB ¾	¾"	M10	39	40	38
SD-UB 1	1"	M10	45	45	40
SD-UB 1¼	1¼"	M10	54	55	45
SD-UB 1½	1½"	M10	60	55	45
SD-UB 2	2"	M10	72	60	45
SD-UB 2½	2½"	M10	86	75	55
SD-UB 3	3"	M10	102	80	55
SD-UB 4	4"	M10	128	95	55
SD-UB 6	6"	M12	184	130	70
SD-UB 8	8"	M12	239	155	70
SD-UB 10	10"	M20	273	370	100
SD-UB 12	12"	M20	324	420	100
SD-UB 14	14"	M20	356	455	100
SD-UB 16	16"	M20	406	505	100
SD-UB 18	18"	M24	457	555	100
SD-UB 20	20"	M24	508	605	100
SD-UB 24	24"	M24	610	710	100

Notes:

- Measurements are subject to 5% tolerance.
- Other Sizes available on request.
- U Bolt sizes can be modified to match with Rubber support inserts.
- Alternate rod sizes for different pipe sizes are also available.
- Hot Dipped Galvanized can be supplied upon request.
- SHIELD reserves the right to change the contents without notice.

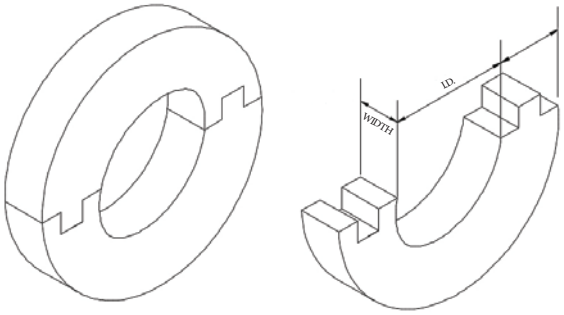
Shield Rubber Support Insert

Model : SD-RSI

Features:

- Very high load bearing capacity.
- Dimensionally accurate as each piece is moulded.
- Tongue and Groove design for small sizes.
- Unique DOVETAIL lock for higher sizes.
- Excellent resistance to Deterioration / Distortion.
- Available with steel reinforcements for higher sizes.

Material: EPDM Rubber



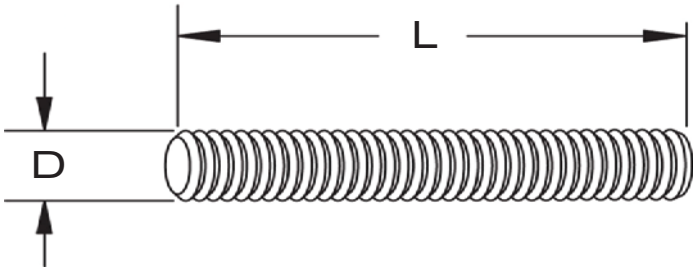
Nominal Pipe Sizes		Schedule 40 Steel Pipe OD	Width of Rubber Support Insert	Part numbers for Rubber Support Insert Thickness							
Inch	mm	mm	mm	½" (13) Inch (mm)	¾" (19) Inch (mm)	1" (25) Inch (mm)	1¼" (32) Inch (mm)	1½" (38) Inch (mm)	2" (50) Inch (mm)	2½" (65) Inch (mm)	3" (75) Inch (mm)
½"	15	21.3	25	SD-RSI13-01	SD-RSI19-01	SD-RSI25-01	SD-RSI32-01	SD-RSI38-01	SD-RSI50-01	SD-RSI65-01	SD-RSI75-01
¾"	20	26.7	25	SD-RSI13-02	SD-RSI19-02	SD-RSI25-02	SD-RSI32-02	SD-RSI38-02	SD-RSI50-02	SD-RSI65-02	SD-RSI75-02
1"	25	33.4	25	SD-RSI13-03	SD-RSI19-03	SD-RSI25-03	SD-RSI32-03	SD-RSI38-03	SD-RSI50-03	SD-RSI65-03	SD-RSI75-03
1¼"	32	42.2	25	SD-RSI13-04	SD-RSI19-04	SD-RSI25-04	SD-RSI32-04	SD-RSI38-04	SD-RSI50-04	SD-RSI65-04	SD-RSI75-04
1½"	40	48.3	25	SD-RSI13-05	SD-RSI19-05	SD-RSI25-05	SD-RSI32-05	SD-RSI38-05	SD-RSI50-05	SD-RSI65-05	SD-RSI75-05
2"	50	60.3	25	SD-RSI13-06	SD-RSI19-06	SD-RSI25-06	SD-RSI32-06	SD-RSI38-06	SD-RSI50-06	SD-RSI65-06	SD-RSI75-06
2½"	65	73.0	38	SD-RSI13-07	SD-RSI19-07	SD-RSI25-07	SD-RSI32-07	SD-RSI38-07	SD-RSI50-07	SD-RSI65-07	SD-RSI75-07
3"	80	88.9	38	SD-RSI13-08	SD-RSI19-08	SD-RSI25-08	SD-RSI32-08	SD-RSI38-08	SD-RSI50-08	SD-RSI65-08	SD-RSI75-08
3½"	90	101.6	38	SD-RSI13-09	SD-RSI19-09	SD-RSI25-09	SD-RSI32-09	SD-RSI38-09	SD-RSI50-09	SD-RSI65-09	SD-RSI75-09
4"	100	114.3	38	SD-RSI13-10	SD-RSI19-10	SD-RSI25-10	SD-RSI32-10	SD-RSI38-10	SD-RSI50-10	SD-RSI65-10	SD-RSI75-10
5"	125	141.3	38	SD-RSI13-11	SD-RSI19-11	SD-RSI25-11	SD-RSI32-11	SD-RSI38-11	SD-RSI50-11	SD-RSI65-11	SD-RSI75-11
6"	150	168.3	50	SD-RSI13-12	SD-RSI19-12	SD-RSI25-12	SD-RSI32-12	SD-RSI38-12	SD-RSI50-12	SD-RSI65-12	SD-RSI75-12
8"	200	219.1	50	SD-RSI13-13	SD-RSI19-13	SD-RSI25-13	SD-RSI32-13	SD-RSI38-13	SD-RSI50-13	SD-RSI65-13	SD-RSI75-13
10"	250	273.0	50	SD-RSI13-14	SD-RSI19-14	SD-RSI25-14	SD-RSI32-14	SD-RSI38-14	SD-RSI50-14	SD-RSI65-14	SD-RSI75-14
12"	300	323.8	50	SD-RSI13-15	SD-RSI19-15	SD-RSI25-15	SD-RSI32-15	SD-RSI38-15	SD-RSI50-15	SD-RSI65-15	SD-RSI75-15
14"	350	355.6	50	SD-RSI13-16	SD-RSI19-16	SD-RSI25-16	SD-RSI32-16	SD-RSI38-16	SD-RSI50-16	SD-RSI65-16	SD-RSI75-16
16"	400	406.4	50	SD-RSI13-17	SD-RSI19-17	SD-RSI25-17	SD-RSI32-17	SD-RSI38-17	SD-RSI50-17	SD-RSI65-17	SD-RSI75-17
18"	450	457.2	50	SD-RSI13-18	SD-RSI19-18	SD-RSI25-18	SD-RSI32-18	SD-RSI38-18	SD-RSI50-18	SD-RSI65-18	SD-RSI75-18
20"	500	508.0	50	SD-RSI13-19	SD-RSI19-19	SD-RSI25-19	SD-RSI32-19	SD-RSI38-19	SD-RSI50-19	SD-RSI65-19	SD-RSI75-19
24"	600	610.0	50	SD-RSI13-20	SD-RSI19-20	SD-RSI25-20	SD-RSI32-20	SD-RSI38-20	SD-RSI50-20	SD-RSI65-20	SD-RSI75-20

Notes:

- Measurements are subject to 5% tolerance.
- Other Sizes available on request.
- SHIELD reserves the right to change the contents without notice.
- Self extinguishing ruber Inserts also available on request.

Shield Threaded Rod

Model : SD-TR



Features:

- Designed for use as a Double end Studs with a nut on either side or as studs.
- Right Handed.
- Coarse Threads.
- Commercial Nut Fit.

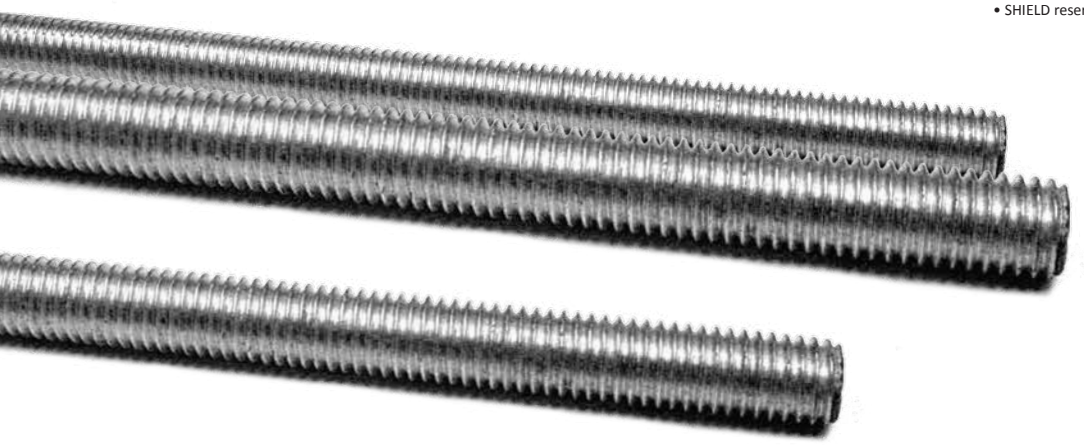
Material: Low Carbon Steel

Standard: DIN 975, steel - Property Class 4.8

Finishing: Zinc Plated.

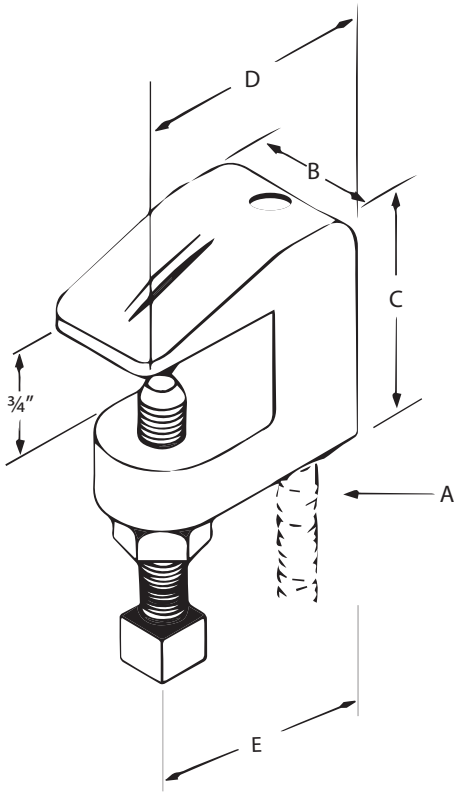
Thread (D)	Coarse & Fine Thread Length (L) = 1000mm, 2000mm & 3000 mm										
	MM	M4	M5	M6	M7	M8	M8	M10	M10	M12	M12
Diameter	INCH	0.157	0.197	0.236	0.276	0.315	0.315	0.315	0.394	0.472	0.472
Pitch	MM	0.700	0.800	1.000	1.000	1.000	1.250	1.250	1.500	1.250	1.750
Thread (D)	MM	M14	M16	M16	M18	M20	M20	M22	M24	M27	M30
Diameter	INCH	0.551	0.630	0.630	0.709	0.787	0.787	0.866	0.945	1.063	1.181
Pitch	MM	2.000	1.500	2.000	2.500	1.500	2.500	2.500	3.000	3.000	3.500
Thread (D)	MM	M33	M36	M39	M42	M45	M48	M52	M56	M60	M64
Diameter	INCH	1.299	1.417	1.535	1.654	1.772	1.890	2.047	2.205	2.362	2.520
Pitch	MM	3.500	4.000	4.000	4.500	4.500	5.000	5.000	5.500	5.500	6.000

Notes:
- Measurements are subject to 5% tolerance.
- Other Sizes available on request.
- Left Handed is Available upon request.
- Hot Dipped Galvanized can be supplied upon request.
- SHIELD reserves the right to change the contents without notice.



Shield Beam Clamp

Model : SD-CBC



Features:

Beam Clamps are designed to clamp hanger rod to the beam's top flange or bar joist. Universal open U design allows for adjustments and permissible to use in an inverted position on the bottom flange of the beam also.

Material: Ductile iron ASTM A536, Grade 65-45-12

Finishing: Electro galvanized as per ASTM B 633 Standards.

Model No	Rod Size	Dimensions				Max. Pipe Size	Maximum Load
	A Inch (mm)	B mm	C mm	D mm	E mm	Inch	lbs.
SD-CBC-110	⅜ (10)	21	40	49	42	4	250
SD-CBCA-115	½ (12)	30.2	46.1	55.6	46.5	8	750

Notes:
- Measurements are subject to 5% tolerance.
- Other Sizes available on request.
- Hot Dipped Galvanized can be supplied upon request.
- SHIELD reserves the right to change the contents without notice.

Factory Mutual System

For further information on any aspect of the

Shield range of Pipes & Fittings please contact your nearest office.

United Kingdom

Redburn House, 2a Tonbridge Road

Romford, Essex - RM3 8qe, UK

Email: shielduk@shieldglobal.com

Tel: + 44 (0) 1708 377731

Fax: + 44 (0) 1708 347637

Middle East & Africa

Jebel Ali Free Zone, Dubai, U.A.E.

Email: shieldme@shieldglobal.com

Tel: + 971 4 881 2070

Fax: + 971 4 881 2198

SHIELD

www.shieldglobal.com

PF-V.14-17

ONLINE CERTIFICATIONS DIRECTORY

VIZY.EX15278
Metallic Sprinkler Pipe

Page Bottom

Metallic Sprinkler Pipe

See General Information for Metallic Sprinkler Pipe

SHIELD FIRE SAFETY & SECURITY LTD EX15278
REDBURN HOUSE
2A TONBRIDGE ROAD
ROMFORD, ESSEX RM3 8QE UNITED KINGDOM

Schedule 10 (black and galvanized) steel pipe in the 3/4, 1, 1-1/4, 1-1/2, 2, 2-1/2, 3, 4, 5, 6 and 8 in sizes.

Schedule 40 (black and galvanized), Grade B, Type S steel pipe in the 1/2, 3/4, 1, 1-1/4, 1-1/2, 2, 2-1/2, 3, 4, 5, 6, 8, 10 and 12 in. sizes.

Schedule 80 (black and galvanized), Grade B, Type S steel pipe in the 1/2, 3/4, 1, 1-1/4, 1-1/2, 2, 2-1/2, 3, 4, 5, 6, 8, 10 and 12 in. sizes.

Schedule 40 (black and galvanized), Grade B, Type E steel pipe in the 1/2, 3/4, 1, 1-1/4, 1-1/2, 2, 2-1/2, 3, 4, 5, 6, 8, 10 and 12 in. sizes.

Schedule 40 (black or galvanized) steel pipe in the 1/2, 3/4, 1, 1-1/4, 1-1/2, 2, 2-1/2, 3, 4, 5, 6, 8, 10, 12, 14 and 16 in. sizes

Weight Class STD (black or galvanized) steel pipe, 12 inch size

Schedule 30 (black or galvanized) steel pipe in the 14 and 16 in. sizes

Schedule 20 (black or galvanized) steel pipe in the 10 and 12 in. sizes

Schedule 10 (black or galvanized) steel pipe in the 2-1/2, 3, 4, 6, 8, 10, 14 and 16 in. sizes

Trademark and/or Tradename: SHIELD, SHIELD, SHIELD SD

Last Updated on 2018-03-20

Questions? Print this page Terms of Use Page Top

© 2018 UL LLC

The appearance of a company's name or product in this database does not in itself assure that products so identified have been manufactured under UL's Follow-Up Service. Only those products bearing the UL Mark should be considered to be Certified and covered under UL's Follow-Up Service. Always look for the Mark on the product.

UL permits the reproduction of the material contained in the Online Certification Directory subject to the following conditions: 1. The Guide Information, Assemblies, Constructions, Designs, Systems, and/or Certifications (files) must be presented in their entirety and in a non-misleading manner, without any manipulation of the data (or drawings). 2. The statement "Reprinted from the Online Certifications Directory with permission from UL" must appear adjacent to the extracted material. In addition, the reprinted material must include a copyright notice in the following format: "© 2018 UL LLC".

ONLINE CERTIFICATIONS DIRECTORY

VIZA.EX6657
Fittings, Grooved and Plain End

Page Bottom

Fittings, Grooved and Plain End

See General Information for Fittings, Grooved and Plain End

SHIELD FIRE SAFETY & SECURITY LTD EX6657
REDBURN HOUSE
2A TONBRIDGE ROAD
ROMFORD, ESSEX RM3 8QE UNITED KINGDOM

Grooved

Model	Type	Size In.	Rated Pressure (psig)
SDG 100	90 Degree Elbow	1-1/4, 1-1/2, 2, 2-1/2, 3 OD, 3, 4, 5, 5-1/2 OD, 6, 6-1/2 OD, 8	500
SDG 100	90 Degree Elbow	33.7 mm	500
SDG 100	90 Degree Elbow	133.0 mm, 267.4 mm, 318.5 mm	300
SDG 100	90 Degree Elbow	10	300
SDG 100	90 Degree Elbow	12	225
SDG 100H	90 Degree Elbow	114.3mm x 88.9mm x 33.7mm, 165.1mm x 88.9mm x 33.7mm;	300
SDG 105	90 Degree Short Elbow	2, 2-1/2, 3 OD, 3, 4, 5-1/2 OD, 6, 6-1/2 OD, 8	300
SDG 105	90 Degree Short Elbow	108.0 mm	500
SDG 105	90 Degree Short Elbow	159.0 mm, 216.3 mm	300
SDG 101R	90 Degree Reducing Elbow	88.9 x 76.1mm; 114.3 x 76.1mm, 88.9mm; 165.1 x 114.3mm; 168.3 x 114.3mm	300
SDG 200	45 Degree Elbow	1-1/4, 1-1/2, 2, 2-1/2, 3 OD, 3, 4, 5, 6, 6-1/2 OD, 8, 10, 12	500
SDG 200	45 Degree Elbow	33.7 mm	500
SDG 200	45 Degree Elbow	108.0 mm, 139.7 mm, 159.0 mm, 216.3 mm, 267.4 mm, 318.5 mm	300
SDG 12	Tee	1-1/4, 1-1/2, 2, 2-1/2, 3 OD, 3, 4, 5, 6, 6-1/2 OD, 8, 10, 12	500
SDG 53	Reducing Tee	2 x 1-1/2; 3 x 1, 1-1/2, 2, 2-1/2; 4 x 1, 2, 2-1/2, 3; 5 x 2, 3, 4; 6 x 2, 2-1/2, 3, 4, 5; 8 x 2, 3, 4, 5, 6	500
SDG 53	Reducing Tee	60.3 x 33.7 mm; 73.0 x 48.3 mm, 60.3 mm;	500

		76.1 x 42.4 mm, 48.3 mm, 60.3 mm; 88.9 x 42.4 mm	
SDG 53	Reducing Tee	88.9 x 76.1 mm; 108.0 x 60.3 mm, 73.0 mm, 88.9 mm; 114.3 x 48.3 mm, 76.1 mm; 133.0 x 60.3 mm, 76.1 mm, 108. 0mm, 114.3 mm; 139.7 x 48.3 mm, 60.3 mm, 76.1 mm, 88.9 mm, 114.3 mm; 159.0 x 60.3 mm, 76.1 mm, 88.9 mm, 108.0 mm, 114.3 mm, 133.0 mm; 165.1 x 60.3 mm, 76.1 mm, 88.9 mm, 114.3 mm, 133.0 mm, 139.7 mm, 159.0 mm; 168.3 x 76.1 mm, 139.7 mm; 216.3 x 165.1 mm; 219.1 x 76.1 mm, 108.0 mm, 133.0 mm, 139.7 mm, 159.0 mm, 165.1 mm; 273.0 x 165.1 mm, 168.3 mm, 219.1 mm; 323.9 x 165.1 mm, 219.1 mm, 273.0 mm	300
SDG 53 A	Reducing Tee, Grooved	114.3mm x 88.9mm x 33.7mm, 165.1mm x 88.9mm x 33.7mm;	300
SDG 53 B	Reducing Tee, Grooved	114.3mm x 88.9mm x 33.7mm, 165.1mm x 88.9mm x 33.7mm;	300
SDG 102	Short Tee	2, 2-1/2, 3 OD, 3, 4, 5-1/2 OD, 6, 6-1/2 OD, 8	300
SDG 102	Short Tee	108.0 mm	500
SDG 102	Short Tee	159.0 mm, 216.3 mm	300
SDG 12 TH	Tee	88.9mm, 114.3mm, 168.3mm	300
SDG 53 TH	Reducing Tee	60.3 x 33.7mm, 48.3mm; 73.0 x 33.7mm, 42.4mm; 76.1 x 33.7mm, 42.4mm, 48.3mm, 60.3mm; 88.9 x 33.7mm, 42.4mm, 48.3mm, 60.3mm, 76.1mm	500
SDG 53 TH	Reducing Tee	108.0 x 60.3mm, 76.1mm, 88.9mm; 114.3 x 33.7mm, 42.4mm, 48.3mm, 60.3mm, 76.1mm, 88.9mm; 133.0 x 60.3mm, 76.1mm, 88.9mm; 139.7 x 33.7mm, 42.4mm, 48.3mm, 60.3mm, 76.1mm, 88.9mm; 159.0 x 60.3mm, 76.1mm, 88.9mm; 165.1 x 33.7mm, 42.4mm, 48.3mm, 60.3mm, 76.1mm, 88.9mm, 114.3mm; 168.3 x 60.3mm, 76.1mm, 88.9mm	300
SDG 13	Cross	1-1/4, 1-1/2, 2, 2-1/2, 3 OD, 3, 4, 5, 6, 6-1/2 OD, 8, 10, 12	500
SDG 13	Cross	108.0 mm, 139.7 mm, 159.0 mm	300
SDG 13	Reducing Cross	88.9 x 60.3 mm	500
SDG 13	Reducing Cross	114.3 x 60.3 mm, 88.9 mm; 139.7 x 114.3 mm; 159.0 x 108.0 mm; 165.1 x 60.3 mm, 76.1 mm, 88.9 mm, 114.3 mm; 219.1 x 60.3 mm, 114.3 mm, 139.7 mm, 159.0 mm, 165.1 mm	300
SDG 13R	Reducing Cross	88.9 x 60.3mm	500
SDG 13R	Reducing Cross	114.3 x 60.3mm, 88.9mm; 139.7 x 114.3mm; 159.0 x 108.0mm; 165.1 x 60.3mm, 76.1mm, 88.9mm, 114.3mm; 219.1 x 60.3mm, 114.3mm, 139.7mm, 159.0mm, 165.1mm	300
SDG 13 RTH	Cross	114.3 x 33.7mm, 42.4mm, 48.3mm, 60.3mm; 165.1 x 60.3mm	300

SDG 35	Grooved Concentric Reducer	2 x 3/4, 1, 1-1/4, 1-1/2; 2-1/2 x 1, 1-1/4, 1-1/2, 2; 3 x 3/4, 1, 1-1/2, 2, 2-1/2; 4 x 1, 1-1/2, 2, 2-1/2, 3; 5 x 3, 4; 6 x 1, 2, 2-1/2, 3, 4, 5; 8 x 2-1/2, 3, 4, 5, 6	500
SDG 35	Grooved Concentric Reducer	42.4 x 33.7 mm; 48.3 x 33.7 mm, 42.4 mm; 76.1 x 42.4 mm, 48.3 mm, 60.3 mm; 88.9 x 76.1 mm; 108.0 x 60.3 mm, 73.0 mm	500
SDG 35	Grooved Concentric Reducer	108.0 x 76.1 mm; 114.3 x 42.4 mm, 76.1 mm; 139.7 x 76.1 mm, 88.9 mm, 114.3 mm; 141.3 x 73.0 mm; 159.0 x 60.3 mm, 76.1 mm, 88.9 mm, 108.0 mm, 114.3 mm, 133.0 mm; 165.1 x 60.3 mm, 76.1 mm, 88.9 mm, 114.3 mm, 139.7 mm; 168.3 x 76.1 mm, 139.7 mm; 216.3 x 114.3 mm, 165.1 mm; 219.1 x 108.0 mm, 139.7 mm, 159.0 mm, 165.1 mm; 273.0 x 159.0 mm, 165.1 mm, 168.3 mm, 219.1 mm; 323.9 x 219.1 mm, 273.0 mm	300
SDG 37	Concentric Reducer - FNPT	2 x 3/4, 1, 1-1/4, 1-1/2; 2-1/2 x 1, 1-1/4, 1-1/2, 2; 3 x 3/4, 1, 1-1/2, 2, 2-1/2; 4 x 1, 1-1/2, 2, 2-1/2, 3; 5 x 3, 4; 6 x 1, 2, 2-1/2, 3, 4, 5; 8 x 2-1/2, 3, 4, 5, 6	500
SDG 37	Concentric Reducer With Female Thread	76.1 x 21.3 mm, 26.9 mm, 33.7 mm, 42.4 mm, 48.3 mm, 60.3 mm	500
SDG 37	Concentric Reducer With Female Thread	88.9 x 42.4 mm, 76.1 mm; 108.0 x 33.7 mm, 42.4 mm, 48.3 mm, 60.3 mm, 76.1 mm, 88.9 mm; 114.3 x 21.3 mm, 26.9 mm, 42.4 mm, 76.1 mm; 159.0 x 26.9 mm, 33.7 mm, 42.4 mm, 48.3 mm, 60.3 mm, 88.9 mm, 114.3 mm; 165.1 x 21.3 mm, 26.9 mm, 33.7 mm, 42.4 mm, 48.3 mm, 60.3 mm, 76.1 mm, 88.9 mm, 114.3 mm; 219.1 x 48.3 mm, 60.3 mm, 76.1 mm	300
SDG 39	Concentric Reducer - MNPT	2 x 3/4, 1, 1-1/4, 1-1/2; 2-1/2 x 1, 1-1/4, 1-1/2, 2; 3 x 3/4, 1, 1-1/2, 2, 2-1/2; 4 x 1, 1-1/2, 2, 2-1/2, 3; 5 x 3, 4; 6 x 1, 2, 2-1/2, 3, 4, 5; 8 x 2-1/2, 3, 4, 5, 6	500
SDG 39	Concentric Reducer - MNPT	76.1 x 60.3 mm	500
SDG 14	Cap	1-1/4, 1-1/2, 2, 2-1/2, 3 OD, 3, 4, 5, 5-1/2 OD, 6, 6-1/2 OD, 8, 10, 12	500
SDG 14	Cap	33.7 mm	500
SDG 14	Cap	108.0 mm, 133.0 mm, 139.7 mm, 159.0 mm, 216.3 mm	300
SDG 14	Cap	76.1 x 48.3 mm	500
SDG 14	Cap	88.9 x 21.3 mm, 33.7 mm, 48.3 mm; 114.3 x 21.3 mm, 33.7 mm, 48.3 mm; 165.1 x 21.3 mm, 33.7 mm; 168.3 x 48.3 mm	300
SDG 14A	Cap	88.9 x 48.3mm, 60.3mm; 114.3 x 48.3mm, 60.3mm; 139.7 x 48.3mm, 60.3mm; 165.1 x 48.3mm; 168.3 x 48.3mm, 60.3mm	365
SDG 14A	Cap	219.1 x 48.3mm, 60.3mm	300
SDG	Flange Adapter	2, 2-1/2, 3 OD, 3, 4, 5, 5-1/2 OD, 6, 6-1/2 OD, 8	300

16B			
SDG 16B	Flange Adapter	10, 12	225
SDG 16B	Flange Adapter	33.7mm, 42.4mm, 48.3mm, 60.3mm, 73.0mm, 76.1mm, 88.9mm, 108.0mm, 114.3mm, 133.0mm, 139.7mm, 141.3mm, 159.0mm, 165.1mm, 168.3mm	300
SDG 16B	Flange Adapter	219.1mm, 273.1mm, 323.9mm	225
SDG 16 C	Flange Adapter	108.0mm, 159.0mm	300
SDG 16 A	Flange Adapter	219.1mm, 273.0mm	225
SDG 16	Flange Adapter	2, 2-1/2, 3 OD, 3, 4, 5, 6, 6-1/2 OD, 8	300
SDG 16	Flange Adapter	10, 12	225
SDG 16	Flange Adapter	33.7 mm, 42.4 mm, 48.3 mm, 108.0 mm, 133.0 mm, 159.0 mm	300
SDG 112	11.25 Degree Elbow	42.4 mm, 48.3 mm, 60.3 mm, 76.1 mm, 88.9 mm	500
SDG 112	11.25 Degree Elbow	108.0 mm, 114.3 mm, 139.7 mm, 159.0 mm, 165.1 mm, 168.3 mm, 219.1 mm	300
SDG 225	22.5 Degree Elbow	42.4 mm, 48.3 mm, 60.3 mm, 73.0 mm, 76.1 mm, 88.9 mm	500
SDG 225	22.5 Degree Elbow	108.0 mm, 114.3 mm, 139.7 mm, 159.0 mm, 165.1 mm, 168.3 mm, 219.1 mm	300
SDG 33	Grooved Eccentric Reducer	88.9 x 60.3 mm; 108.0 x 76.1 mm, 88.9 mm; 114.3 x 60.3 mm, 88.9 mm	500
SDG 33	Grooved Eccentric Reducer	114.3 x 76.1 mm; 139.7 x 114.3 mm; 159.0 x 108.0 mm, 114.3 mm; 165.1 x 88.9 mm, 114.3 mm, 139.7 mm; 168.3 x 88.9 mm, 114.3 mm, 139.7 mm; 219.1 x 114.3 mm, 168.3 mm; 273.1 x 219.1 mm	300
SDG 33 TH	Grooved Eccentric Reducer With FeMale Thread	108.0 x 76.1mm	500
SDG 33 TH	Grooved Eccentric Reducer With FeMale Thread	114.3 x 76.1mm; 139.7 x 88.9mm; 165.1 x 88.9mm	300

Trademark and/or Tradename: "SHIELD", SHIELD, SHIELD, SD

Last Updated on 2016-11-24

Questions? Print this page Terms of Use Page Top

© 2018 UL LLC

The appearance of a company's name or product in this database does not in itself assure that products so identified have been manufactured under UL's Follow-Up Service. Only those products bearing the UL Mark should be considered to be Certified and covered under UL's Follow-Up Service. Always look for the Mark on the product.

UL permits the reproduction of the material contained in the Online Certification Directory subject to the following conditions: 1. The Guide Information, Assemblies, Constructions, Designs, Systems, and/or Certifications (files) must be presented in their entirety and in a non-misleading manner, without any manipulation of the data (or drawings). 2. The statement "Reprinted from the Online Certifications Directory with permission from UL" must appear adjacent to the extracted material. In addition, the reprinted material must include a copyright notice in the following format: "© 2018 UL LLC".

HHXX.EX6706
Fittings, Cast Iron, Ductile Iron, Malleable Iron and Bronze

Page Bottom

Fittings, Cast Iron, Ductile Iron, Malleable Iron and Bronze

See General Information for Fittings, Cast Iron, Ductile Iron, Malleable Iron and Bronze

SHIELD FIRE SAFETY & SECURITY LTD EX6706
REDBURN HOUSE
2A TONBRIDGE ROAD
ROMFORD, ESSEX RM3 8QE UNITED KINGDOM

Ductile Iron Fittings (ANSI/ASME B16.3)

Fittings fabricated with dimensional specifications in accordance with ANSI/ASME B16.3

Model	Configuration	Size, in.	Rated Pressure, psig
SDT 100	90° Elbow	1/2, 3/4, 1, 1-1/4, 1-1/2, 2, 2-1/2, 3, 4	500
SDT 101	Reducing 90° Elbow	3/4, 1, 1-1/4, 1-1/2, 2, 2-1/2, 3x3/4	500
SDT 200	45° Elbow	1/2, 3/4, 1, 1-1/4, 1-1/2, 2, 2-1/2	500
SDT 12	Tee	1/2, 3/4, 1, 1-1/4, 1-1/2, 2, 2-1/2, 3, 4	500
SDT 53	Reducing Tee	3/4, 1, 1-1/4, 1-1/2, 2, 2-1/2, 3/4x1/2x1/2, 3/4x1/2x3/4, 2-1/2x2-1/2x3/4, 2-1/2x2-1/2x1, 2-1/2x2-1/2x1-1/4, 2-1/2x2-1/2x1-1/2, 2-1/2x2-1/2x2, 2-1/2x2-1/2x3	500
SDT 57	Hex Bushing	1, 1-1/4, 1-1/2, 2, 1-1/4x3/4	500
SDT 22	Straight Coupling w/stop	1/2, 3/4, 1, 1-1/4, 1-1/2, 2, 2-1/2	500
SDT 30	Reducing	1/2, 3/4, 1, 1-1/4	500
	Coupling w/hex	1-1/4x1, 1-1/2x1, 1-1/2x1-1/4, 2x1-1/4, 2x1-1/2	—
SDT 13	Cross	1, 1-1/4, 1-1/2, 2, 3/4	500
SDT 51	Reducing Cross	1-1/4, 1-1/2, 2	500
SDT 14	Cap	1/2, 3/4, 1, 1-1/4, 1-1/2, 2, 2-1/2	500
SDT 55	Square Head Plug	1/2, 3/4, 1, 1-1/4, 1-1/2, 2	500
SDT 59	Union	1, 1-1/4, 1-1/2, 2	500
SDC 100	90° Elbow	1/2, 3/4, 1, 1-1/4, 1-1/2, 2, 2-1/2, 3, 4	500

SDC 101	Reducing 90° Elbow	3/4, 1, 1-1/4, 1-1/2, 2, 2-1/2, 3x3/4	500
SDC 200	45° Elbow	1/2, 3/4, 1, 1-1/4, 1-1/2, 2, 2-1/2	500
SDC 12	Tee	1/2, 3/4, 1, 1-1/4, 1-1/2, 2, 2-1/2, 3, 4	500
SDC 53	Reducing Tee	3/4, 1, 1-1/4, 1-1/2, 2, 2-1/2, 3/4x1/2x1/2, 3/4x1/2x3/4,2-1/2x2-1/2x3/4, 2-1/2x2-1/2x1,2-1/2x2-1/2x1-1/4, 2-1/2x2-1/2x1-1/2,2-1/2x2-1/2x2, 2-1/2x2-1/2x3	500
SDC 30	Reducing	1/2, 3/4, 1, 1-1/4	500
	Coupling w/hex	1-1/4x1, 1-1/2x1, 1-1/2x1-1/4, 2x1-1/4, 2x1-1/2	—
SDC 13	Cross	1, 1-1/4, 1-1/2, 2	300
SDC 51	Reducing Cross	1-1/4x1, 1-1/2x1, 2x1	300
SDC 55	Cored Plugs	3/4, 1, 1-1/4, 1-1/2, 2	300
SDC-55S	Solid Plugs	1/2	300

CAST IRON FITTINGS

Cast Iron Fittings (ANSI/ASME B16.4)

Model	Configuration	Size, in.	Rated Pressure, psig
SDT 100	90° Elbow	1, 1-1/4, 1-1/2, 2, 2-1/2, 3, 4	300
SDT 101	Reducing 90° Elbow	1/2, 3/4, 1, 1-1/4, 1-1/2, 2, 2-1/2, 3/4x1/2, 3x2	300
SDT 200	45° Elbow	1, 1-1/4, 1-1/2, 2, 2-1/2, 3, 4	300
SDT 12	Tee	1, 1-1/4, 1-1/2, 2, 2-1/2, 3, 4	300
SDT 53	Reducing Tee	1x1x1-1/2, 2x1/2x2, 2x1x1-1/2,2-1/2x1/2x2-1/2, 2-1/2x2x1/2,2-1/2x2x3/4, 2-1/2x2x1,2-1/2x2x1-1/4, 2-1/2x2x1-1/2,2-1/2x2x2, 2-1/2x2x2-1/2,3x3x1-1/4, 3x3x1-1/2, 3x3x2	300
SDT 13	Cross	1, 1-1/4, 1-1/2, 2	300
SDT 51	Reducing Cross	1-1/4x1, 1-1/2x1, 2x1	300
SDT 30	Reducing Coupling w/hex	1, 2, 1-1/4x1, 2x3/4	300
SDT 55	Cored Plugs	3/4, 1, 1-1/4, 1-1/2, 2	300
SDC 100	90° Elbow	1, 1-1/4, 1-1/2, 2, 2-1/2, 3, 4	300
SDC 101	Reducing 90° Elbow	1/2, 3/4, 1, 1-1/4, 1-1/2, 2, 2-1/2, 3/4x1/2, 3x2	300
SDC 200	45° Elbow	1, 1-1/4, 1-1/2, 2, 2-1/2, 3, 4	300
SDC 12	Tee	1, 1-1/4, 1-1/2, 2, 2-1/2, 3, 4	300
SDC	Reducing Tee	1x1x1-1/2, 2x1/2x2, 2x1x1-1/2, 2-1/2x1/2x2-1/2, 2-1/2x2x1/2, 2-1/2x2x3/4, 2-	300

53		1/2x2x1, 2-1/2x2x1-1/4, 2-1/2x2x1-1/2, 2-1/2x2x2, 2-1/2x2x2-1/2, 3x3x1-1/4, 3x3x1-1/2, 3x3x2	
SDC 30	Reducing Coupling w/hex	1, 2, 1-1/4x1, 2x3/4	300

Malleable Iron Fittings (ANSI/ASME B16.3, ANSI/ASME B16.14)

Fittings fabricated with dimensional specifications in accordance with ANSI/ASME B16.3

Model	Configuration	Size, in.	Rated Pressure, psig
SDT 100	90° Elbow	1/2, 3/4, 1, 1-1/4, 1-1/2, 2	500
SDT 100	90° Elbow	2-1/2, 3, 3-1/2, 4, 5, 6	300
SDT 101	90° Reducing Elbow	1/2x1/4, 3/8; 3/4x1/4, 3/8, 1/2; 1x3/8, 1/2, 3/4; 1-1/4x1/2, 3/4, 1; 1-1/2x3/4, 1, 1-1/4; 2x3/4, 1, 1-1/4, 1-1/2	500
SDT 101	90° Reducing Elbow	2-1/2x1-1/2, 2; 3x2, 2-1/2; 4x3	300
SDT 200	45° Elbow	1/2, 3/4, 1, 1-1/4, 1-1/2, 2	500
SDT 200	45° Elbow	2-1/2, 3, 4, 5, 6	300
SDT 12	Tee	1/2, 3/4, 1, 1-1/4, 1-1/2, 2	500
SDT 12	Tee	2-1/2, 3, 3-1/2, 4, 5, 6	300
SDT 53	Reducing Tee	3/8x3/8x1/2, 1/2x1/4x1/2, 1/2x3/8x1/2, 1/2x1/2x1/4, 1/2x1/2x3/8, 1/2x1/2x3/4, 1/2x1/2x1, 3/4x1/2x1/2, 3/4x1/2x3/4, 3/4x3/4x1/4, 3/4x3/4x3/8, 3/4x3/4x1/2, 3/4x3/4x1, 1x1/2x1/2, 1x1/2x3/4, 1x1/2x1, 1x3/4x1/2, 1x3/4x3/4, 1x3/4x1, 1x1x1/4, 1x1x3/8, 1x1x1/2, 1x1x3/4, 1x1x1-1/4, 1x1x1-1/2, 1x1x2, 1-1/4x1/2x1, 1-1/4x1/2x1-1/4, 1-1/4x3/4x3/4, 1-1/4x3/4x1, 1-1/4x3/4x1-1/4, 1-1/4x1x1/2, 1-1/4x1x3/4, 1-1/4x1x1, 1-1/4x1x1-1/4, 1-1/4x1-1/4x3/8, 1-1/4x1-1/4x1/2, 1-1/4x1-1/4x3/4, 1-1/4x1-1/4x1, 1-1/4x1-1/4x1-1/2, 1-1/4x1-1/4x2, 1-1/2x1/2x1-1/2, 1-1/2x3/4x1-1/2, 1-1/2x1x1, 1-1/2x1x1-1/4, 1-1/2x1x1-1/2, 1-1/2x1-1/4x1/2, 1-1/2x1-1/4x3/4, 1-1/2x1-1/4x1, 1-1/2x1-1/4x1-1/4, 1-1/2x1-1/4x1-1/2, 1-1/2x1-1/2x1/2, 1-1/2x1-1/2x3/4, 1-1/2x1-1/2x1, 1-1/2x1-1/2x1-1/4, 1-1/2x1-1/2x2, 2x1/2x2, 2x3/4x2, 2x1x1-1/2, 2x1x2, 2x1-1/4x1-1/4, 2x1-1/4x1-1/2, 2x1-1/4x2, 2x1-1/2x1, 2x1-1/2x1-1/4, 2x1-1/2x1-1/2, 2x1-1/2x2, 2x2x1/2, 2x2x3/4, 2x2x1, 2x2x1-1/4, 2x2x1-1/2	500
SDT 53	Reducing Tee	2x2x2-1/2, 2-1/2x1-1/2x2, 2-1/2x1-1/2x2-1/2, 2-1/2x2x2, 2-1/2x2x2-1/2, 2-1/2x2-1/2x3/4, 2-1/2x2-1/2x1, 2-1/2x2-1/2x1-1/4, 2-1/2x2-1/2x1-1/2, 2-1/2x2-1/2x2, 3x2x2, 3x2x3, 3x3x3/4, 3x3x1, 3x3x1-1/4, 3x3x1-1/2, 3x3x2, 3x3x2-1/2, 4x4x1-1/2, 4x4x2, 4x4x2-1/2, 4x4x3	300
SDT 13	Cross	1/2, 3/4, 1, 1-1/4, 1-1/2, 2	500
SDT 13	Cross	2-1/2, 3, 3-1/2, 4	300
SDT 51	Reducing Cross	3/4x1/2, 1x1/2, 1x3/4, 1-1/4x3/4, 1-1/4x1, 1-1/2x3/4, 1-1/2x1, 1-1/2x1-1/4, 2x3/4, 2x1, 2x1-1/4, 2x1-1/2	500
SDT 51	Reducing Cross	2-1/2x2, 3x2	300
SDT 22	Coupling	1/2, 3/4, 1, 1-1/4, 1-1/2, 2	500
SDT 22	Coupling	2-1/2, 3, 4	300
SDT 30	Reducing Coupling	1/2x1/8, 1/2x1/4, 1/2x3/8, 3/4x1/4, 3/4x3/8, 3/4x1/2, 1x1/4, 1x3/8, 1x1/2, 1x3/4, 1-1/4x1/2, 1-1/4x3/4, 1-1/4x1, 1-1/2x1/2, 1-1/2x3/4, 1-1/2x1, 1-1/2x1-1/4, 2x1/2, 2x3/4, 2x1, 2x1-1/4, 2x1-1/2	500
SDT 30	Reducing Coupling	2-1/2x1-1/2, 2-1/2x2, 3x1-1/2, 3x2, 3x2-1/2, 4x2, 4x3	300

SDT 14	Cap	1/2, 3/4, 1, 1-1/4, 1-1/2, 2	500
SDT 14	Cap	2-1/2, 3, 3-1/2, 4, 5, 6	300
SDC 100	90° Elbow	1/2, 3/4, 1, 1-1/4, 1-1/2, 2	500
SDC 100	90° Elbow	2-1/2, 3, 3-1/2, 4, 5, 6	300
SDC 101	90° Reducing Elbow	1/2x1/4, 3/8; 3/4x1/4, 3/8, 1/2; 1x3/8, 1/2, 3/4; 1-1/4x1/2, 3/4, 1; 1-1/2x3/4, 1, 1-1/4; 2x3/4, 1, 1-1/4, 1-1/2	500
SDC 101	90° Reducing Elbow	2-1/2x1-1/2, 2; 3x2, 2-1/2; 4x3	300
SDC 200	45° Elbow	1/2, 3/4, 1, 1-1/4, 1-1/2, 2	500
SDC 200	45° Elbow	2-1/2, 3, 4, 5, 6	300
SDC 12	Tee	1/2, 3/4, 1, 1-1/4, 1-1/2, 2	500
SDC 12	Tee	2-1/2, 3, 3-1/2, 4, 5, 6	300
SDC 53	Reducing Tee	3/8x3/8x1/2, 1/2x1/4x1/2, 1/2x3/8x1/2, 1/2x1/2x1/4, 1/2x1/2x3/8, 1/2x1/2x3/4, 1/2x1/2x1, 3/4x1/2x1/2, 3/4x1/2x3/4, 3/4x3/4x1/4, 3/4x3/4x3/8, 3/4x3/4x1/2, 3/4x3/4x1, 1x1/2x1/2, 1x1/2x3/4, 1x1/2x1, 1x3/4x1/2, 1x3/4x3/4, 1x3/4x1, 1x1x1/4, 1x1x3/8, 1x1x1/2, 1x1x3/4, 1x1x1-1/4, 1x1x1-1/2, 1x1x2, 1-1/4x1/2x1, 1-1/4x1/2x1-1/4, 1-1/4x3/4x3/4, 1-1/4x3/4x1, 1-1/4x3/4x1-1/4, 1-1/4x1x1/2, 1-1/4x1x3/4, 1-1/4x1x1, 1-1/4x1x1-1/4, 1-1/4x1-1/4x3/8, 1-1/4x1-1/4x1/2, 1-1/4x1-1/4x3/4, 1-1/4x1-1/4x1, 1-1/4x1-1/4x1-1/2, 1-1/4x1-1/4x2, 1-1/2x1/2x1-1/2, 1-1/2x3/4x1-1/2, 1-1/2x1x1, 1-1/2x1x1-1/4, 1-1/2x1x1-1/2, 1-1/2x1-1/4x1/2, 1-1/2x1-1/4x3/4, 1-1/2x1-1/4x1, 1-1/2x1-1/4x1-1/4, 1-1/2x1-1/4x1-1/2, 1-1/2x1-1/2x1/2, 1-1/2x1-1/2x3/4, 1-1/2x1-1/2x1, 1-1/2x1-1/2x1-1/4, 1-1/2x1-1/2x2, 2x1/2x2, 2x3/4x2, 2x1x1-1/2, 2x1x2, 2x1-1/4x1-1/4, 2x1-1/4x1-1/2, 2x1-1/4x2, 2x1-1/2x1, 2x1-1/2x1-1/4, 2x1-1/2x1-1/2, 2x1-1/2x2, 2x2x1/2, 2x2x3/4, 2x2x1, 2x2x1-1/4, 2x2x1-1/2	500
SDC 53	Reducing Tee	2x2x2-1/2, 2-1/2x1-1/2x2, 2-1/2x1-1/2x2-1/2, 2-1/2x2x2, 2-1/2x2x2-1/2, 2-1/2x2-1/2x3/4, 2-1/2x2-1/2x1, 2-1/2x2-1/2x1-1/4, 2-1/2x2-1/2x1-1/2, 2-1/2x2-1/2x2, 3x2x2, 3x2x3, 3x3x3/4, 3x3x1, 3x3x1-1/4, 3x3x1-1/2, 3x3x2, 3x3x2-1/2, 4x4x1-1/2, 4x4x2, 4x4x2-1/2, 4x4x3	300
SDC 30	Reducing Coupling	1/2x1/8, 1/2x1/4, 1/2x3/8, 3/4x1/4, 3/4x3/8, 3/4x1/2, 1x1/4, 1x3/8, 1x1/2, 1x3/4, 1-1/4x1/2, 1-1/4x3/4, 1-1/4x1, 1-1/2x1/2, 1-1/2x3/4, 1-1/2x1, 1-1/2x1-1/4, 2x1/2, 2x3/4, 2x1, 2x1-1/4, 2x1-1/2	500
SDC 30	Reducing Coupling	2-1/2x1-1/2, 2-1/2x2, 3x1-1/2, 3x2, 3x2-1/2, 4x2, 4x3	300
SDT 110	90° Street Elbow	1/2, 3/4, 1, 1-1/4, 1-1/2, 2	500
SDT 110	90° Street Elbow	2-1/2, 3, 4, 6	300
SDT-210	45° Street Elbow	1/2, 3/4, 1, 1-1/4, 1-1/2, 2	500
SDT-210	45° Street Elbow	2-1/2, 3, 4	300
SDT-12S	Street Tee	1/2, 3/4, 1, 1-1/4, 1-1/2, 2	500
SDT-28	45° Y-Branches	1/2, 3/4, 1, 1-1/4, 1-1/2, 2	500
SDT-28	45° Y-Branches	2-1/2, 3, 4	300

Fittings fabricated with dimensional specifications in accordance with ANSI/ASME B16.14

Model	Configuration	Size, in.	Rated Pressure, psig

SDT 57	Bushing	1/2x1/8, 1/2x1/4, 1/2x3/8, 3/4x1/8, 3/4x1/4, 3/4x3/8, 3/4x1/2, 1x1/8, 1x1/4, 1x3/8, 1x1/2, 1x3/4, 1-1/4x1/4, 1-1/4x3/8, 1-1/4x1/2, 1-1/4x3/4, 1-1/4x1, 1-1/2x1/4, 1-1/2x3/8, 1-1/2x1/2, 1-1/2x3/4, 1-1/2x1, 1-1/2x1-1/4, 2x1/4, 2x3/8, 2x1/2, 2x3/4, 2x1, 2x1-1/4, 2x1-1/2, 2-1/2x1/2, 2-1/2x3/4, 2-1/2x1, 2-1/2x1-1/4, 2-1/2x1-1/2, 2-1/2x2, 3x1/2, 3x3/4, 3x1, 3x1-1/4, 3x1-1/2, 3x2, 3x2-1/2, 3-1/2x2-1/2, 3-1/2x3, 4x1-1/4, 4x1-1/2, 4x3, 4x3-1/2, 5x4, 6x5	300
SDT 55	Cored Plugs	1/2, 3/4, 1, 1-1/4, 1-1/2, 2, 2-1/2, 3, 3-1/2	300
SDT-57	Bushing	1/2x1/8, 1/2x1/4, 1/2x3/8, 3/4x1/8, 3/4x1/4, 3/4x3/8, 3/4x1/2, 1x1/8, 1x1/4, 1x3/8, 1x1/2, 1x3/4, 1-1/4x1/4, 1-1/4x3/8, 1-1/4x1/2, 1-1/4x3/4, 1-1/4x1, 1-1/2x1/4, 1-1/2x3/8, 1-1/2x1/2, 1-1/2x3/4, 1-1/2x1, 1-1/2x1-1/4, 2x1/4, 2x3/8, 2x1/2, 2x3/4, 2x1, 2x1-1/4, 2x1-1/2, 2-1/2x1/2, 2-1/2x3/4, 2-1/2x1, 2-1/2x1-1/4, 2-1/2x1-1/2, 2-1/2x2, 3x1/2, 3x3/4, 3x1, 3x1-1/4, 3x1-1/2, 3x2, 3x2-1/2, 3-1/2x2-1/2, 3-1/2x3, 4x1-1/4, 4x1-1/2, 4x3, 4x3-1/2, 5x4, 6x5	300
SDT-55S	Solid Plugs	1/2, 3/4, 1, 1-1/4, 1-1/2, 2, 2-1/2, 3, 3-1/2	300
SDT-56	Slotted Head Plugs	4, 5, 6	300
SDT-55N	Countersunk Plugs	1/2, 3/4, 1, 1-1/4, 1-1/2, 2, 2-1/2, 3, 4	300

Malleable Iron Fittings, ISO 49/EN 10242 (threads manufactured in accordance with ISO 7-1):

Model	Configuration	Size, in.	Rated Pressure, psig
SDT 110	Street Elbow, 90 degree	1/8", 1/4", 3/8", 1/2", 3/4", 1", 1-1/4", 1-1/2", 2", 2-1/2", 3", 4", 6"	500

Trademark and/or Tradename: "SD", SHIELD, SHIELD, SHIELD SD

Last Updated on 2016-11-12

Questions? Print this page Terms of Use Page Top

© 2018 UL LLC

The appearance of a company's name or product in this database does not in itself assure that products so identified have been manufactured under UL's Follow-Up Service. Only those products bearing the UL Mark should be considered to be Certified and covered under UL's Follow-Up Service. Always look for the Mark on the product.

UL permits the reproduction of the material contained in the Online Certification Directory subject to the following conditions: 1. The Guide Information, Assemblies, Constructions, Designs, Systems, and/or Certifications (files) must be presented in their entirety and in a non-misleading manner, without any manipulation of the data (or drawings). 2. The statement "Reprinted from the Online Certifications Directory with permission from UL" must appear adjacent to the extracted material. In addition, the reprinted material must include a copyright notice in the following format: "© 2018 UL LLC".

ONLINE CERTIFICATIONS DIRECTORY

VIZM.EX6660
Fittings, Rubber Gasketed

Page Bottom

Fittings, Rubber Gasketed

See General Information for Fittings, Rubber Gasketed

SHIELD FIRE SAFETY & SECURITY LTD EX6660
REDBURN HOUSE
2A TONBRIDGE ROAD
ROMFORD, ESSEX RM3 8QE UNITED KINGDOM

Coupling

Model	Groove Type	Pipe	Size (in.)	Rated Pressure (psig)
SDG 22	Rolled	10	2, 3, 4, 5, 6	300
SDG 22	Rolled	1387-10	3 OD, 6-1/2 OD	300
SDG 22	Rolled, Cut	40	2, 2-1/2, 3, 4, 5, 6	300
SDG 22	Rolled, Cut	1387-40	3 OD, 6-1/2 OD	300
SDG 22	Rolled	10	1-1/4, 1-1/2, 2-1/2	500
SDG 22	Rolled	10	8	450
SDG 22	Rolled, Cut	40	8	450
SDG 22	Rolled	10	10, 12	300
SDG 22	Rolled, Cut	40	10, 12	300
SDG 20	Rolled	10	3, 6, 8	300
SDG 20	Rolled	40	3, 4, 6, 8	300
SDG 20	Rolled	1387-M	3 OD, 5-1/2 OD, 6-1/2 OD	300
SDG 20	Rolled	1387-H	3 OD, 5-1/2 OD, 6-1/2 OD	300

Flexible coupling

Model	Groove Type	Pipe	Size (in.)	Rated Pressure (psig)
SDG 25	Rolled	10	1-1/4, 1-1/2, 2, 2-1/2, 3, 4, 5, 6	300
SDG 25	Rolled	10	8	450
SDG 25	Rolled	1387-10	3 OD, 6-1/2 OD	300
SDG 25	Rolled	1387-M	5-1/2 OD	450
SDG 25	Rolled, Cut	1387-H	5-1/2 OD	450
SDG 25	Rolled, Cut	40	8	450
SDG 25	Rolled, Cut	40	1-1/4, 1-1/2, 2, 2-1/2, 3, 4, 5, 6	300
SDG 25	Rolled, Cut	1387-40	3 OD, 6-1/2 OD	300
SDG 30	Rolled	10	1-1/4, 1-1/2, 2, 2-1/2, 3, 4, 5, 6	300
SDG 30	Rolled	10	8	450
SDG 30	Rolled	1387-10	3 OD, 6-1/2 OD	300

SDG 30	Rolled	1387-M	5-1/2 OD	450
SDG 30	Rolled	1387-M, 10	2-1/2 x 2; 3 OD x 1-1/2, 2; 3 x 2, 2-1/2, 3 OD; 4 x 2, 2-1/2, 3 OD, 3; 6-1/2 OD x 4; 6 x 4; 8 x 6-1/2 OD, 6	300
SDG 30	Rolled, Cut	40	1-1/4, 1-1/2, 2, 2-1/2, 3, 4, 5, 6	300
SDG 30	Rolled, Cut	40	8	450
SDG 30	Rolled, Cut	1387-40	3 OD, 6-1/2 OD	300
SDG 30	Rolled, Cut	1387-H	5-1/2 OD	450
SDG 30	Rolled, Cut	1387-H, 40	2-1/2 x 2; 3 OD x 1-1/2, 2; 3 x 2, 2-1/2, 3 OD; 4 x 2, 2-1/2, 3 OD, 3; 6-1/2 OD x 4; 6 x 4; 8 x 6-1/2 OD, 6	300

Side outlet

Model	Outlet Type	Pipe	Size (in.)	Rated Pressure (psig)
SDG 44	Grooved	10, 40	2 x 1-1/4, 1-1/2; 2-1/2 x 1-1/4, 1-1/2; 3 x 1-1/4, 1-1/2, 2; 4 x 1-1/4, 1-1/2, 2, 2-1/2, 3; 5 x 1-1/4, 1-1/2, 2, 2-1/2, 3; 6 x 1-1/4, 1-1/2, 2, 2-1/2, 3, 4	300
SDG 44	Grooved	1387-M, 1387-H	3 OD x 1-1/4, 1-1/2; 5-1/2 OD x 2, 2-1/2, 3; 6-1/2 OD x 2, 2-1/2, 3	300
SDG 42	Threaded	10, 40	2 x 1-1/4, 1-1/2; 2-1/2 x 1-1/4, 1-1/2; 3 x 1-1/4, 1-1/2, 2; 4 x 1-1/4, 1-1/2, 2, 2-1/2, 3; 5 x 1-1/4, 1-1/2, 2, 2-1/2, 3; 6 x 1-1/4, 1-1/2, 2, 2-1/2, 3, 4	300
SDG 42	Threaded	1387-M, 1387-H	3 OD x 1, 1-1/4, 1-1/2; 5-1/2 OD x 1, 1-1/4, 1-1/2, 2, 2-1/2, 3; 6-1/2 OD x 1, 1-1/4, 1-1/2, 2, 2-1/2, 3	300
SDG 49	Grooved	10, 40	2 x 1-1/4, 1-1/2; 2-1/2 x 1-1/4, 1-1/2; 3 x 1-1/4, 1-1/2, 2; 4 x 1-1/4, 1-1/2, 2, 2-1/2, 3; 5 x 1-1/4, 1-1/2, 2, 2-1/2, 3; 6 x 1-1/4, 1-1/2, 2, 2-1/2, 3, 4	300
SDG 49	Grooved	1387-M, 1387-H	3 OD x 1-1/4, 1-1/2; 5-1/2 OD x 2, 2-1/2, 3; 6-1/2 OD x 2, 2-1/2, 3	300
SDG 47	Threaded	10, 40	2 x 1-1/4, 1-1/2; 2-1/2 x 1-1/4, 1-1/2; 3 x 1-1/4, 1-1/2, 2; 4 x 1-1/4, 1-1/2, 2, 2-1/2, 3; 5 x 1-1/4, 1-1/2, 2, 2-1/2, 3; 6 x 1-1/4, 1-1/2, 2, 2-1/2, 3, 4	300
SDG 47	Threaded	1387-M, 1387-H	3 OD x 1, 1-1/4, 1-1/2; 5-1/2 OD x 1, 1-1/4, 1-1/2, 2, 2-1/2, 3; 6-1/2 OD x 1, 1-1/4, 1-1/2, 2, 2-1/2, 3	300
SDG 48	Threaded and Grooved	10, 40	2 x 1-1/4, 1-1/2; 2-1/2 x 1-1/4, 1-1/2; 3 x 1-1/4, 1-1/2, 2; 4 x 1-1/4, 1-1/2, 2, 2-1/2, 3; 5 x 1-1/4, 1-1/2, 2, 2-1/2, 3; 6 x 1-1/4, 1-1/2, 2, 2-1/2, 3, 4	300

Flange adapter

Model	Groove Type	Pipe	Size (in.)	Rated Pressure (psig)
SDG 15	Rolled	10	2, 2-1/2, 3, 4, 5, 6, 8	300
SDG 15	Rolled	1387-10	3OD, 6-1/2 OD	300
SDG 15	Rolled, Cut	40	2, 2-1/2, 3, 4, 5, 6, 8	300
SDG 15	Rolled, Cut	1387-40	3OD, 6-1/2 OD	300
SDG 15	Rolled	10	10, 12	225
SDG 15	Rolled, Cut	40	10, 12	225

Flexible coupling

Model	Groove Type	Pipe	Size (in.)	Rated Pressure (psig)
SDG 27	Rolled, Cut	4200	60.3 / 3.2 mm, 73.0 / 3.2 mm, 76.1 / 3.6 mm, 88.9 / 3.2 mm, 114.3 / 3.6 mm, 141.3 / 6.3 mm	500
SDG 27	Rolled, Cut	4200	168.3 / 4.0 mm, 219.1 / 5.0 mm	300
SDG 27	Rolled, Cut	1387 M	165.1 / 5.0 mm	300

Side outlet

Model	Outlet Type	Pipe	Size (in.)	Rated Pressure (psig)
SDG 40	Threaded	4200	42.4 / 3.6 x 21.3 / 2.8 mm, 26.9 / 2.9 mm, 33.7 / 3.2 mm; 48.3 / 4.0 x 21.3 / 2.8 mm, 26.9 / 2. 9 mm, 33.7 / 3.2 mm; 60.3 / 3.2 x 21.3 / 2.8 mm, 26.9 / 2.9 mm, 33.7 / 3.2 mm; 73.0 / 3.2 x 21.3 / 2.8 mm, 26.9 / 2.9 mm, 33.7 / 3.2 mm; 76.1 / 3.6 x 21.3 / 2.8 mm, 26.9 / 2.9 mm, 33.7 / 3.2 mm; 88.9 / 3.2 x 33.7 / 3.2 mm	300

Model SDG 40 in the 1/2 in. and 3/4 in. nominal outlet sizes are intended for direct connection to sprinklers.

Model SDG 40 in the 1 in. and larger nominal outlet sizes are intended for connection to system piping.

Suitable for use in dry pipe systems for temperatures to -40 F

10 refers to Schedule 10 steel pipe in accordance with NFPA 13.

40 refers to Schedule 40 steel pipe in accordance with NFPA 13.

1387-10 refers to BS 1387 Schedule 10 steel pipe

1387-40 refers to BS 1387 Schedule 40 steel pipe

Trademark and/or Tradename: "SD", SHIELD, SHIELD

Last Updated on 2016-04-19

© 2018 UL LLC

The appearance of a company's name or product in this database does not in itself assure that products so identified have been manufactured under UL's Follow-Up Service. Only those products bearing the UL Mark should be considered to be Certified and covered under UL's Follow-Up Service. Always look for the Mark on the product.

UL permits the reproduction of the material contained in the Online Certification Directory subject to the following conditions: 1. The Guide Information, Assemblies, Constructions, Designs, Systems, and/or Certifications (files) must be presented in their entirety and in a non-misleading manner, without any manipulation of the data (or drawings). 2. The statement "Reprinted from the Online Certifications Directory with permission from UL" must appear adjacent to the extracted material. In addition, the reprinted material must include a copyright notice in the following format: "© 2018 UL LLC".

Steel Pipe

This pipe is FM Approved for use in automatic sprinkler systems. Unless otherwise noted in individual listings, pressure rating is 175 psi (1205 kPa) and use is limited to wet-pipe systems.

In addition to certain specific FM Approvals requirements, Approval is based upon conformance to American Society for Testing and Materials (ASTM) Standards. ASTM A-53 and A-135 are used for Schedule 40 pipe (and Schedule 30 in larger sizes) and ASTM A-135 for Schedule 10 (0.188 in. (5 mm) wall pipe in larger sizes). Pipe meeting ASTM A-795 is also approvable.

Generally, joining by threading or cut-grooving is limited to pipe of the "standard-weight" Schedules, 30 or 40. Schedule 10 pipe is usually joined by roll-grooving. "Lightwall" pipe is non-threadable, is close to Schedule 5 in size, but is non-standard in wall thickness. "Thinwall" pipe is threadable, is close to Schedule 10 in size, but is also non-standard in wall thickness. The life expectancy of steel piping products varies widely depending on characteristics such as the water conditions and pipe material, as well as wall thickness. Such factors should be considered when selecting piping products. Approval of any piping product is not confirmation of equivalent field longevity to any pipe schedule or material identified in this introductory section.

All FM Approved pipe is suitable for joining by welding or FM Approved plain end fittings where so listed. When welding pipe products, close adherence to recognized welding procedures and the use of welders certified under these procedures shall be followed. Pipe of other schedules or unusual joint design may be FM Approved if shown to be of comparable performance to the traditional products. Approval of individual pipe fittings and couplings may limit them to use with specific schedules of pipe or at specific pressure ratings. Use caution to ensure that a given pipe fitting or coupling is FM Approved for use on a given schedule of pipe and that the rated working pressures are compatible. In all cases, the installation instructions of both the pipe manufacturer and the pipe fitting or coupling manufacturer should be observed.

Please see individual listings for acceptability when used in hybrid sprinkler systems composed of steel and plastic piping.

Pressure ratings of completed sprinkler systems are determined by the lowest pressure rated component in the system.

The following notations are used within the listings for Steel Pipe, and have been shown here for reference if searching for a particular feature on a given product.

Note	*Description*
a.	FM Approved for use with FM Approved pipe couplings on rolled or cut grooves.
b.	FM Approved for use with FM Approved pipe fittings when threaded.
c.	FM Approved for use in welded systems when supplied with standard bevel on ends.
d.	When hot dip galvanized by factory, the sprinkler pipe is FM Approved for dry systems.
e.	Any FM Approved pipe coupling or fitting suitable for use with Schedule 10 pipe may be used with this product at the lower rated pressure of the pipe or the fitting.
f.	This product is not FM Approved for threaded connections.
g.	FM Approved for use with FM Approved plain-end fittings.
h.	FM Approved for use when the listings of the couplings or fittings make specific mention of their suitability with this sprinkler pipe.
i.	FM Approved with a 12 ft (3.6m) maximum hanger spacing.
j.	3/4in (20mm) nominal size limited for use in valve trim.
k.	FM Approved for use in dry sprinkler systems.
l.	FM Approved for use when joined by FM Approved “Press-Fit” couplings.
m.	FM Approved for use in all steel sprinkler systems when uncoated or coated (see individual listings for specific coatings).
n.	FM Approved for use in hybrid sprinkler systems composed of uncoated steel and plastic piping.
o.	FM Approved for use in hybrid sprinkler systems composed of coated steel and plastic piping (see individual listings for specific coatings and plastic piping).
p.	Manufactured out of ASTM A53 Grade B steel as an alternate material.

© 2007-2018 FM Approvals. All rights reserved.

Schedule 40-Normal connections are threaded, welded, rolled or cut groove or plain end

Schedule 40 a,b,c,d,e,j

Company Name:	Shield Fire Safety and Security Ltd
Company Address:	Redburn House, 2a Tonbridge Rd, Romford, Essex, RM3 8QE, United Kingdom
Company Website:	http://shieldglobal.com
New/Updated Product Listing:	No
Nominal Pipe Size, mm(in.):	1/2, 3/4, 1, 1 1⁄4, 1 1⁄2, 2, 2 1/2, 3, 4, 5, 6, 8, 10, 12
Rated Working Pressure, psi:	300
Rated Working Pressure, kPa:	2070
Listing Country:	United Kingdom
Certification Type:	FM Approved
Primary Class of Work:	1630-Steel Pipe Spklr Sys Serv

a - For use with FM Approved pipe couplings on rolled or cut grooves.
b - For use with FM Approved pipe fittings when threaded.
c - For use in welded systems when supplied with standard bevel on ends.
d - Approved for Dry Systems when supplied with hot gipped galvanized from factory.
e - Any FM Approved pipe coupling or fitting suitable for use with Schedule 40 pipe may be used with this product at the lower rated pressure of the pipe or the fitting.
j - 1/2 inch (15mm) and 3/4 inch (20mm) nominal pipe size is permitted for use as valve trim, gauge connections, and for other peripheral service.

© 2007-2018 FM Approvals. All rights reserved.

Grooved Couplings or Fittings

Grooved couplings are used to join pipe and fittings in both wet and dry sprinkler systems. Unless otherwise noted, these couplings are intended to provide some flexibility in piping systems. Typical applications are in sprinkler risers, in feed mains passing through walls from one building area to another, in locations subject to earthquakes, in the discharge line from aboveground pump suction tanks, in new connections to existing feed mains and in air or water fire service lines subject to excessive vibration or difficult alignment.

Unless otherwise noted, these couplings are limited to use with rolled or cut groove-ended pipe, valves and fittings, at a minimum rated working pressure of 175 psi (1205 kPa) and are suitable for aboveground service. Higher rated pressures are noted in the text of the listing. Selection of pipe schedules for use with grooved pipe couplings should be made according to applicable FM Global Property Loss Prevention Data Sheets installation standards. These pipe schedules determine system pressure ratings and may take precedence over the higher rated working pressures listed for some couplings.

Installation must be made according to the manufacturer's instructions and requirements. Where couplings are used to join FM Approved pipe, the pipe manufacturer's installation instructions and requirements must also be observed. Grooves should be made according to ANSI/AWWA C606 (latest edition), "Grooved and Shouldered Joints", unless otherwise specified.

FM Approved grooved pipe couplings joining steel pipe may be used in underground service, subject to the installation restrictions placed upon the pipe and to the coupling manufacturer's recommendations and requirements.

Unless otherwise stated in the listing, these couplings have been evaluated for a maximum ambient temperature of 225°F (107°C), suitable for use in normal warehouse protection. For special applications, temperatures, or environments, the manufacturer's recommendations and requirements are to be followed.

Grooved Couplings, Reducing-Flexible

These couplings join pipe, valves or fittings having different nominal pipe diameters.

SDG 30

Product Designation	*Nominal Pipe Size, in.*	*Pipe Ends*	*Remarks*	*Max Working Pressure, psi (kPa)*
SDG 30	2 x 1 1⁄2 2 1⁄2 x 1, 2 3 x 1, 2, 2 1⁄2 4 x 1, 2 4 x 2 1⁄2, 3 6 x 3, 4 8 x 6	Cut Groove Rolled Groove	a, b, c, d	300 (2070)
	76.1 x 33.7, 1 1⁄2, 2 3 x 76.1 4 x 76.1 165 x 4 8 x 165	Cut Groove Rolled Groove	a, b, c, d	300 (2070)

Remarks:
a. Minimum schedule cut groove pipe to be joined: 6 in. NPS and smaller – Schedule 40; 8 in. NPS and larger – Schedule 30.
b. Minimum schedule rolled groove pipe to be joined: 6 in. NPS and smaller – Schedule 10S; 8 in. NPS and larger 0.188 in. (5 mm) wall.
c. Approved when supplied with EPDM gasket.
d. Approved for use with GB/T3092 regular and extra heavy pipe, ISO 4200, and BS 1387 medium and heavy pipe.

Company Name:	Shield Fire Safety and Security Ltd
Company Address:	Redburn House, 2a Tonbridge Rd, Romford, Essex, RM3 8QE, United Kingdom
Company Website:	http://shieldglobal.com
New/Updated Product Listing:	No
Listing Country:	United Kingdom
Certification Type:	FM Approved
Primary Class of Work:	1920-Coupling & Fitting, All Type

© 2007-2018 FM Approvals. All rights reserved.

Grooved Couplings or Fittings

Grooved couplings are used to join pipe and fittings in both wet and dry sprinkler systems. Unless otherwise noted, these couplings are intended to provide some flexibility in piping systems. Typical applications are in sprinkler risers, in fe mains passing through walls from one building area to another, in locations subject to earthquakes, in the discharge line from aboveground pump suction tanks, in new connections to existing feed mains and in air or water fire service line subject to excessive vibration or difficult alignment.

Unless otherwise noted, these couplings are limited to use with rolled or cut groove-ended pipe, valves and fittings, at a minimum rated working pressure of 175 psi (1205 kPa) and are suitable for aboveground service. Higher rated press are noted in the text of the listing. Selection of pipe schedules for use with grooved pipe couplings should be made according to applicable FM Global Property Loss Prevention Data Sheets installation standards. These pipe schedules determine system pressure ratings and may take precedence over the higher rated working pressures listed for some couplings.

Installation must be made according to the manufacturer's instructions and requirements. Where couplings are used to join FM Approved pipe, the pipe manufacturer's installation instructions and requirements must also be observed. Gro should be made according to ANSI/AWWA C606 (latest edition), "Grooved and Shouldered Joints", unless otherwise specified.

FM Approved grooved pipe couplings joining steel pipe may be used in underground service, subject to the installation restrictions placed upon the pipe and to the coupling manufacturer's recommendations and requirements.

Unless otherwise stated in the listing, these couplings have been evaluated for a maximum ambient temperature of 225°F (107°C), suitable for use in normal warehouse protection. For special applications, temperatures, or environments, manufacturer's recommendations and requirements are to be followed.

Grooved Couplings, Standard-Rigid

These couplings join pipe, valves or fittings having equal diameters.

SDG 22

	Rated Working Pressures for Model SDG 22 Rigid Coupling by Pipe [a, b, c]																						
	Nominal Pipe Size																						
Pipe Description	***1 (33.7)***	***1-1/4 (42.7)***	***1-1/2 (48.3)***	***2 (60.3)***	***2-1/2 (73.1)***	***(76.1)***	***3 (88.9)***	***(108)***	***4 (114.3)***	***(133)***	***(139.7)***	***5 (141.3)***	***(159)***	***(165.1)***	***6 (168.3)***	***(216.3)***	***8 (219.1)***	***(267)***	***10 (273)***	***(318)***	***12 (323.9)***	***(356)***	***(377)***
Schedule 40, Cut Groove	500 (3450)	500 (3450)	500 (3450)	500 (3450)	500 (3450)	500 (3450)	500 (3450)		500 (3450)		500 (3450)	500 (3450)		500 (3450)	500 (3450)		300 (2070)		300 (2070)	300 (2070)	300 (2070)	300 (2070)	300 (2070)
Schedule 40, Roll Groove	500 (3450)	500 (3450)	500 (3450)	500 (3450)	500 (3450)	500 (3450)	500 (3450)		500 (3450)		500 (3450)	500 (3450)		500 (3450)	500 (3450)		300 (2070)		300 (2070)		300 (2070)		
Schedule 30, Cut Groove																	300 (2070)		300 (2070)		300 (2070)		
Schedule 30, Rolled Groove	500 (3450)	500 (3450)	500 (3450)	500 (3450)	500 (3450)	500 (3450)	500 (3450)		500 (3450)		500 (3450)	500 (3450)		500 (3450)	500 (3450)		300 (2070)		300 (2070)		300 (2070)		
Thinwall Pipes, Rolled Groove																							
Schedule 10, Rolled Groove	500 (3450)	500 (3450)	500 (3450)	500 (3450)	500 (3450)	500 (3450)	500 (3450)		500 (3450)		500 (3450)	500 (3450)		500 (3450)	500 (3450)								
0.188" Wall, Rolled Groove																	300 (2070)		300 (2070)		300 (2070)		
Schedule 10, Swage Groove																							
Lightwall Pipes, Rolled Groove																							
Lightwall Pipes, Swage Groove																							
Schedule 5 Pipe, Rolled Groove																							
EN 10220 (ISO 4200), Cut Groove																							
Thickness F		500 (3445)		500 (3445)	500 (3445)	500 (3445)	500 (3445)	300 (2070)	500 (3445)	300 (2070)	500 (3445)	500 (3445)	300 (2070)	500 (3445)	500 (3445)	300 (2070)	300 (2070)		300 (2070)		300 (2070)		
Thickness G	500 (3445)	500 (3445)	500 (3445)	500 (3445)	500 (3445)	500 (3445)	500 (3445)	300 (2070)	500 (3445)	300 (2070)	500 (3445)	500 (3445)	300 (2070)	500 (3445)	500 (3445)	300 (2070)	300 (2070)		300 (2070)		300 (2070)		
EN 10220 (ISO 4200), Rolled Groove																							
Thickness D								300 (2070)	500 (3445)		500 (3445)	500 (3445)	300 (2070)	500 (3445)	500 (3445)	300 (2070)	300 (2070)		300 (2070)		300 (2070)		
Thickness E				500 (3445)			500 (3445)	300 (2070)	500 (3445)		500 (3445)	500 (3445)	300 (2070)	500 (3445)	500 (3445)	300 (2070)	300 (2070)		300 (2070)		300 (2070)		
Thickness F	500 (3445)	500 (3445)	500 (3445)	500 (3445)	500 (3445)	500 (3445)	500 (3445)	300 (2070)	500 (3445)		500 (3445)	500 (3445)	300 (2070)	500 (3445)	500 (3445)	300 (2070)	300 (2070)		300 (2070)		300 (2070)		
Thickness G	500 (3445)	500 (3445)	500 (3445)	500 (3445)	500 (3445)	500 (3445)	500 (3445)	300 (2070)	500 (3445)		500 (3445)	500 (3445)	300 (2070)	500 (3445)	500 (3445)	300 (2070)	300 (2070)		300 (2070)		300 (2070)		

© 2007-2018 FM Approvals. All rights reserved.

ed
s

ures

oves

the

(406)	*(426)*
300 (2070)	300 (2070)

© 2007-2018 FM Approvals. All rights reserved.

EN 10255 (BS 1387) Medium, Rolled Groove	500 (3445)	500 (3445)	500 (3445)	500 (3445)		500 (3445)	500 (3445)		500 (3445)		500 (3445)			500 (3445)									
EN 10255 (BS 1387) Heavy, Rolled Groove	500 (3445)	500 (3445)	500 (3445)	500 (3445)		500 (3445)	500 (3445)		500 (3445)		500 (3445)			500 (3445)									
Chinese Standard GB/T 3092, Regular Rolled Groove	500 (3445)	500 (3445)	500 (3445)	500 (3445)	500 (3445)	500 (3445)	500 (3445)	300 (2070)	500 (3445)		500 (3445)	500 (3445)		500 (3445)	500 (3445)		300 (2070)		300 (2070)		300 (2070)		
Chinese Standard GB/T 3092, Extra Heavy Rolled Groove	500 (3445)	500 (3445)	500 (3445)	500 (3445)	500 (3445)	500 (3445)	500 (3445)	300 (2070)	500 (3445)		500 (3445)	500 (3445)		500 (3445)	500 (3445)		300 (2070)		300 (2070)		300 (2070)		

Remarks:
a.) Minimum schedule cut groove pipe to be joined: 6 inch or smaller, Schedule 40; 8 inch or larger, Schedule 30
b.) Minimum schedule rolled groove pipe to be joined: 6 inch or smaller, Schedule 10; 8, 10 or 12 inch - 0.188 inch (4.78 mm) wall
c.) All couplings in table above, Approved when supplied with an EDPM gasket using standard gasket lubricant or dry lubricant

Company Name:	Shield Fire Safety and Security Ltd
Company Address:	Redburn House, 2a Tonbridge Rd, Romford, Essex, RM3 8QE, United Kingdom
Company Website:	http://shieldglobal.com
New/Updated Product Listing:	No
Listing Country:	United Kingdom
Certification Type:	FM Approved
Primary Class of Work:	1920-Coupling & Fitting, All Type

© 2007-2018 FM Approvals. All rights reserved.

© 2007-2018 FM Approvals. All rights reserved.

Grooved Couplings or Fittings

Grooved couplings are used to join pipe and fittings in both wet and dry sprinkler systems. Unless otherwise noted, these couplings are intended to provide some flexibility i piping systems. Typical applications are in sprinkler risers, in feed mains passing through walls from one building area to another, in locations subject to earthquakes, in the discharge line from aboveground pump suction tanks, in new connections to existing feed mains and in air or water fire service lines subject to excessive vibration or difficul alignment.

Unless otherwise noted, these couplings are limited to use with rolled or cut groove-ended pipe, valves and fittings, at a minimum rated working pressure of 175 psi (1205 kPa) and are suitable for aboveground service. Higher rated pressures are noted in the text of the listing. Selection of pipe schedules for use with grooved pipe couplings should be made according to applicable FM Global Property Loss Prevention Data Sheets installation standards. These pipe schedules determine system pressure ratings and may take precedence over the higher rated working pressures listed for some couplings.

Installation must be made according to the manufacturer's instructions and requirements. Where couplings are used to join FM Approved pipe, the pipe manufacturer's installation instructions and requirements must also be observed. Grooves should be made according to ANSI/AWWA C606 (latest edition), "Grooved and Shouldered Joints", unless otherwise specified.

FM Approved grooved pipe couplings joining steel pipe may be used in underground service, subject to the installation restrictions placed upon the pipe and to the coupling manufacturer's recommendations and requirements.

Unless otherwise stated in the listing, these couplings have been evaluated for a maximum ambient temperature of 225°F (107°C), suitable for use in normal warehouse protection. For special applications, temperatures, or environments, the manufacturer's recommendations and requirements are to be followed.

Grooved Couplings, Standard-Rigid

These couplings join pipe, valves or fittings having equal diameters.

SDG 20

	Rated Working Pressures for Model SDG 20 Rigid Coupling by Pipe [a, b, c]																		
	Nominal Pipe Size																		
Pipe Description	***1 (33.7)***	***1-1/4 (42.7)***	***1-1/2 (48.3)***	***2 (60.3)***	***2-1/2 (73.1)***	***(76.1)***	***3 (88.9)***	***(108)***	***4 (114.3)***	***(133)***	***(139.7)***	***5 (141.3)***	***(159)***	***(165.1)***	***6 (168.3)***	***(216.3)***	***8 (219.1)***	***(267)***	***10 (273)***
Schedule 40, Cut Groove				300 (2070)	300 (2070)		350 (2415)		350 (2415)		350 (2415)	350 (2415)		350 (2415)	350 (2415)		350 (2415)		
Schedule 40, Roll Groove				300 (2070)	300 (2070)		350 (2415)		350 (2415)		350 (2415)	350 (2415)		350 (2415)	350 (2415)		350 (2415)		
Schedule 30, Cut Groove																			
Schedule 30, Rolled Groove				300 (2070)	300 (2070)		350 (2415)		350 (2415)		350 (2415)	350 (2415)		350 (2415)	350 (2415)		350 (2415)		
Thinwall Pipes, Rolled Groove																			
Schedule 10, Rolled Groove				300 (2070)	300 (2070)		350 (2415)		350 (2415)		350 (2415)	350 (2415)		350 (2415)	350 (2415)				
0.188" Wall, Rolled Groove																	350 (2415)		
Schedule 10, Swage Groove																			
Lightwall Pipes, Rolled Groove																			
Lightwall Pipes, Swage Groove																			
Schedule 5 Pipe, Rolled Groove																			
EN 10220 (ISO 4200), Cut Groove																			

© 2007-2018 FM Approvals. All rights reserved.

n
t

(318)	***12 (323.9)***

© 2007-2018 FM Approvals. All rights reserved.

Thickness F				300 (2070)	300 (2070)	300 (2070)	350 (2415)	300 (2070)	350 (2415)		350 (2415)	350 (2415)	300 (2070)	350 (2415)	350 (2415)	300 (2070)	350 (2415)		
Thickness G				300 (2070)	300 (2070)	300 (2070)	350 (2415)	300 (2070)	350 (2415)		350 (2415)	350 (2415)	300 (2070)	350 (2415)	350 (2415)	300 (2070)	350 (2415)		
EN 10220 (ISO 4200), Rolled Groove																			
Thickness D								300 (2070)	350 (2415)		350 (2415)	350 (2415)	300 (2070)	350 (2415)	350 (2415)	300 (2070)	350 (2415)		
Thickness E				300 (2070)			350 (2415)	300 (2070)	350 (2415)		350 (2415)	350 (2415)	300 (2070)	350 (2415)	350 (2415)	300 (2070)	350 (2415)		
Thickness F				300 (2070)	300 (2070)	300 (2070)	350 (2415)	300 (2070)	350 (2415)		350 (2415)	350 (2415)	300 (2070)	350 (2415)	350 (2415)	300 (2070)	350 (2415)		
Thickness G				300 (2070)	300 (2070)	300 (2070)	350 (2415)	300 (2070)	350 (2415)		350 (2415)	350 (2415)	300 (2070)	350 (2415)	350 (2415)	300 (2070)	350 (2415)		
EN 10255 (BS 1387) Medium, Rolled Groove				300 (2070)		300 (2070)	350 (2415)		350 (2415)		350 (2415)			350 (2415)					
EN 10255 (BS 1387) Heavy, Rolled Groove				300 (2070)		300 (2070)	350 (2415)		350 (2415)		350 (2415)			350 (2415)					
Chinese Standard GB/T 3092, Regular Rolled Groove				300 (2070)	300 (2070)	300 (2070)	350 (2415)	300 (2070)	350 (2415)		350 (2415)	350 (2415)		350 (2415)	350 (2415)		350 (2415)		
Chinese Standard GB/T 3092, Extra Heavy Rolled Groove				300 (2070)	300 (2070)	300 (2070)	350 (2415)	300 (2070)	350 (2415)		350 (2415)	350 (2415)		350 (2415)	350 (2415)		350 (2415)		

Remarks:
a.) Minimum schedule cut groove pipe to be joined: 6 inch or smaller, Schedule 40; 8 inch or larger, Schedule 30
b.) Minimum schedule rolled groove pipe to be joined: 6 inch or smaller, Schedule 10; 8, 10 or 12 inch - 0.188 inch (4.78 mm) wall
c.) All couplings in table above, Approved when supplied with an EDPM gasket using standard gasket lubricant or dry lubricant

Company Name:	Shield Fire Safety and Security Ltd
Company Address:	Redburn House, 2a Tonbridge Rd, Romford, Essex, RM3 8QE, United Kingdom
Company Website:	http://shieldglobal.com
New/Updated Product Listing:	No
Listing Country:	United Kingdom
Certification Type:	FM Approved
Primary Class of Work:	1920-Coupling & Fitting, All Type

© 2007-2018 FM Approvals. All rights reserved.

© 2007-2018 FM Approvals. All rights reserved.

Pipe Fittings

These fittings are suitable for interconnecting piping, valves and other components in both wet and dry automatic sprinkler systems. Installation should be according to applicable sprinkler system fabrication rules. These rules limit the minimum size of sprinkler piping to 1 in., nominal. FM Approved pipe fittings of smaller sizes are intended for use as valve trim, gauge connections, and for other peripheral service. The water flow path of the sprinkler system cannot be designed using smaller sizes than 1 in., nominal. Unless otherwise noted in the listing, these fittings have 175 psi (1205 kPa) rated working pressure.

Threaded connections on fittings can be made to FM Approved threadable thinwall pipe or to Schedule 40 pipe. Refer to the "Steel Pipe" listings for a summary of the various types of FM Approved steel pipe suitable for threading or grooving."

The fittings manufacturer's installation instructions must be observed in all cases. When connections are made to FM Approved pipe, the pipe manufacturer's installation instructions must also be followed.

Unless otherwise stated below, the maximum ambient temperature to which these fittings should be subjected is 225°F (107°C).

Pipe Fittings

Shield Fire Safety, Pipe Fittings

Product Designation	*Fitting Description*	*Nominal Pipe size, mm*	*Max Working Pressure, psi (kPa)*
Model SDG100	90° Elbow, Grooved Ends	1 1⁄4, 1 1⁄2, 2, 2 1⁄2, 3, 4, 5, 6, 8	500 (3450)
Model SDG200	45° Elbow, Grooved Ends	1 1⁄4, 1 1⁄2, 2, 2 1⁄2, 3, 4, 5, 6, 8, 10, 12	500 (3450)
Model SDG200	45° Elbow, Grooved Ends	76.1, 165 mm	500 (3450)
Model SDG12	Equal Tee, Grooved Ends	1 1⁄4, 1 1⁄2, 2, 2 1⁄2, 3, 4, 5, 6, 8, 10, 12	500 (3450)
Model SDG12	Equal Tee, Grooved Ends	76.1, 165 mm	500 (3450)
Model SDG53	Reducing Tee, Grooved Ends	2 x 1 1⁄2, 3 x 1, 1 1⁄2, 2, 2 1⁄2, 4 x 1, 2, 2 1⁄2, 3, 5 x 2, 3, 4, 6 x 2, 2 1⁄2, 3, 4, 5, 8 x 2, 3, 4, 5, 6	500 (3450)
Model SDG13	Equal Cross, Grooved Ends	1 1⁄4, 1 1⁄2, 2, 2 1⁄2, 3, 4, 5, 6, 8, 10, 12	500 (3450)
Model SDG13	Equal Cross, Grooved Ends	76.1, 165 mm	500 (3450)
Model SDG35	Concentric Reducer, Grooved Ends	2 x 3⁄4, 1, 1 1⁄4, 1 1⁄2, 2 1⁄2 x 1, 1 1⁄4, 1 1⁄2, 2, 3 x 3⁄4, 1, 1 1⁄2, 2, 2 1⁄2, 4 x 1, 1 1⁄2, 2, 2 1⁄2, 3, 5 x 3, 4, 6 x 1, 2, 2 1⁄2, 3, 4, 5, 8 x 2 1⁄2, 3, 4, 5, 6	500 (3450)
Model SDG37	Concentric Reducer, Groove x Female NPT	2 x 3⁄4, 1, 1 1⁄4, 1 1⁄2, 2 1⁄2 x 1, 1 1⁄4, 1 1⁄2, 2, 3 x 3⁄4, 1, 1 1⁄2, 2, 2 1⁄2, 4 x 1, 1 1⁄2, 2, 2 1⁄2, 3, 5 x 3, 4, 6 x 2, 2 1⁄2, 3, 4, 5, 8 x 2 1⁄2, 3, 4, 5, 6	500 (3450)

© 2007-2018 FM Approvals. All rights reserved.

Model SDG39	Concentric Reducer, Groove x Male NPT	2 x 3/4, 1, 1 1/4, 1 1/2, 2 1/2 x 1, 1 1/4, 1 1/2, 2, 3 x 3/4, 1, 1 1/2, 2, 2 1/2, 4 x 1, 1 1/2, 2, 2 1/2, 3, 5 x 3, 4, 6 x 2, 2 1/2, 3, 4, 5, 8 x 2 1/2, 3, 4, 5, 6	500 (3450)
Model SDG14	Grooved End Cap	1 1/4, 1 1/2, 2, 2 1/2, 3, 4, 5, 6, 8, 10, 12	500 (3450)
Model SDG14	Grooved End Cap	76.1, 165 mm	500 (3450)
Model SDG16	Flange x Groove Adapter	2, 2 1/2, 3, 4, 5, 6, 8	500 (3450)
Model SDG16	Flange x Groove Adapter	76.1, 165mm	500 (3450)
Model SDT14	D.I. Cap, Threaded	1/2, 3/4, 1, 1 1/4, 1 1/2, 2, 2 1/2	500 (3450)
Model SDT22	D.I. Straight Coupling, Threaded	1/2, 3/4, 1, 1 1/4, 1 1/2, 2, 2 1/2	500 (3450)
Model SDT100	D.I. 90° Elbow, Threaded	1/2, 3/4, 1, 1 1/4, 1 1/2, 2, 2 1/2	500 (3450)
Model SDT200	D.I. 45° Elbow, Threaded	1/2, 3/4, 1, 1 1/4, 1 1/2, 2, 2 1/2	500 (3450)
Model SDT57	D.I. Bushings, Threaded	1 x 1/2, 3/4 1 1/4 x 3/4 2 x 1	500 (3450)
Model SDT30	D.I. Concentric Reducer, Threaded	1 x 1/2, 3/4 1 1/4 x 3/4 2 x 1	500 (3450)
Model SDT101	D.I. 90° Reducing Elbow, Threaded	3/4 x 1/2 1 x 1/2, 3/4 1 1/4 x 1/2, 3/4, 1 1 1/2 x 3/4, 1, 1 1/4 2 x 3/4, 1, 1 1/4, 1 1/2 2 1/2 x 1 1/2, 2	500 (3450)
Model SDT53	Reducing Tee, Threaded	3/4 x 3/4 x 1/2, 1 3/4 x 1/2 x 3/4, 1/2 1 x 1 x 1/2, 3/4, 1 1/4, 1 1/2 1 x 3/4 x 3/4, 1 1 x 1/2 x 1 1 1/4 x 1 1/4 x 1/2, 3/4, 1, 1 1/2, 2 1 1/4 x 1 x 1/2, 3/4, 1, 1 1/4, 1 1/2 1 1/4 x 3/4 x 1 1/4 1 1/4 x 1/2 x 1 1/4 1 1/2 x 1 1/2 x 1/2, 3/4, 1, 1, 1 1/4, 2 1 1/2 x 1 1/4 x 1/2, 3/4, 1, 1 1/4, 1 1/2 1 1/2 x 1 x 1/2, 3/4, 1, 1 1/4, 1 1/2 1 1/2 x 3/4 x 1 1/4, 1 1/2 1 1/2 x 1/2 x 1 1/4, 1 1/2	500 (3450)

© 2007-2018 FM Approvals. All rights reserved.

		2 x 2 x 1/2, 3/4, 1, 1 1/4, 1 1/2, 2 1/2 2 x 1 1/2 x 1/2, 3/4, 1, 1 1/4, 1 1/2, 2 2 x 1 1/4 x 2 2 x 1 x 2 2 1/2 x 2 1/2 x 3/4, 1, 1 1/4, 1 1/2, 2, 3	
Model SDT51	D.I. Reducing Cross, Threaded	1 1/4 x 1, 1 1/2 x 1, 2 x 1	500 (3450)
Model SDT55	D.I. Square Head Pipe Plug	1/2, 3/4, 1, 1 1/4, 1 1/2, 2	500 (3450)
Model SDT12	D.I. Equal Tee, Threaded	1/2, 3/4, 1, 1 1/4, 1 1/2, 2, 2 1/2	500 (3450)
Model SDT59	D.I. Union, Threaded	1, 1 1/4, 1 1/2, 2	500 (3450)
Model SDT13	D.I. Cross, Threaded	1, 1 1/4, 1 1/2, 2	500 (3450)
Model SDC100	C.I. 90° Elbow, Threaded	1/2, 3/4, 1, 1 1/4, 1 1/2, 2, 2 1/2	300 (2070)
Model SDC200	C.I. 45° Elbow, Threaded	1/2, 3/4, 1, 1 1/4, 1 1/2, 2, 2 1/2	300 (2070)
Model SDC30	C.I. Concentric Reducer, Threaded	1 x 1/2, 3/4 2 x 1	300 (2070)
Model SDC101	C.I. 90° Reducing Elbow, Threaded	1 x 1/2, 3/4, 1 1/4 x 1/2, 3/4, 1, 1 1/2 x 1/2, 3/4, 1, 1 1/4, 2 x 1/2, 3/4, 1, 1 1/4, 1 1/2, 2 1/2 x 3/4, 1, 1 1/4, 1 1/2, 2	300 (2070)
Model SDC53	C.I. Reducing Tee, Threaded	1 x 1/2 x 1/2, 3/4, 1, 1 x 3/4 x 1/2, 3/4, 1, 1 x 1 x 1/2, 3/4, 1 1/4, 1 x 1 1/4 x 1, 1 1/4 x 1 1/4 x 1/2, 3/4, 1, 1 1/2, 2, 1 1/4 x 1 x 1/2, 3/4, 1, 1 1/4, 1 1/2,, 1 1/4 x 3/4 x 1 1/4, 1 1/4 x 1/2 x 1 1/4, 1 1/2 x 1 1/2 x 1/2, 3/4, 1, 1, 1 1/4, 2, 1 1/2 x 1 1/4 x 1/2, 3/4, 1, 1 1/4, 1 1/2, 1 1/2 x 1 x 1/2, 3/4, 1, 1 1/4, 1 1/2, 2, 1 1/2 x 3/4 x 1 1/4, 1 1/2, 1 1/2 x 1/2 x 1 1/4, 1 1/2, 2 x 2 x 1/2, 3/4, 1, 1 1/4, 1 1/2, 2 x 1 1/2 x 1/2, 3/4, 1, 1 1/4, 1 1/2, 2, 2 x 1 1/4 x 1/2, 1, 1 1/4, 1 1/2, 2, 2 x 1 x 3/4, 1, 1 1/4, 2, 2 x 2 x 2 1/2, 2 1/2 x 2 x 1/2, 3/4, 1,	300 (2070)

© 2007-2018 FM Approvals. All rights reserved.

		1 1⁄4, 1 1⁄2, 2, 2 1⁄2, 2 x 1 1⁄4 x 2 1⁄2, 2 x 1 x 2 1⁄2, 2 x 3⁄4 x 2 1⁄2, 2 1⁄2 x 1⁄2 x 2, 2 1⁄2	
Model SDC12	C.I. Equal Tee, Threaded	1⁄2, 3⁄4, 1, 1 1⁄4, 1 1⁄2, 2	300 (2070)

SD-UFLEX and SD-VFLEX Expansion Loops

Product Designation	*Fitting Description*	*Nominal Pipe Size, in.*	*Rated Working Pressure, psi (kPa)*	*Remarks*
SD-UFLEX Expansion Loop	Type 1, Welded Ends, 180° Return	1, 1-1/4, 1-1/2, 2, 2-1/2, 3, 4, 5, 6, 8, 10 (25, 32, 40, 50, 65, 80, 100, 125, 150, 200, 250 mm)	250 (1725)	—
	Type 2, Flanged Ends, 180° Return	1, 1-1/4, 1-1/2, 2, 2-1/2, 3, 4, 5, 6, 8, 10 (25, 32, 40, 50, 65, 80, 100, 125, 150, 200, 250 mm)	250 (1725)	—
	Type 3, Swivel Flanged Ends, 180° Return	1, 1-1/4, 1-1/2, 2, 2-1/2, 3, 4, 5, 6, 8, 10 (25, 32, 40, 50, 65, 80, 100, 125, 150, 200, 250 mm)	250 (1725)	—
	Type 4, Threaded Ends, 180° Return	1, 1-1/4, 1-1/2, 2, 2-1/2, 3, 4, 5, 6, 8, 10 (25, 32, 40, 50, 65, 80, 100, 125, 150, 200, 250 mm)	250 (1725)	—
	Type 5, Sweat Ends, 180° Return	1, 1-1/4, 1-1/2, 2 (25, 32, 40, 50)	250 (1725)	—
	Type 6, Sweat Ends, With intermediate pipe	1, 1-1/4, 1-1/2, 2 (25, 32, 40, 50)	250 (1725)	—
	Type 7, Cut Groove Ends, 180° Return	1, 1-1/4, 1-1/2, 2, 2-1/2, 3, 4, 5, 6, 8, 10 (25, 32, 40, 50, 65, 80, 100, 125, 150, 200, 250 mm)	250 (1725)	a,b
SD-VFLEX Expansion Loop	Type 7, Cut Groove Ends, 180° Return	1, 1-1/4, 1-1/2, 2, 2-1/2, 3, 4, 5, 6, 8, 10 (25, 32, 40, 50, 65, 80, 100, 125, 150, 200, 250 mm)	250 (1725)	a, b

Remarks:
a. Min schedule cut groove pipe to be joined: 4 in. or smaller - Schedule 40.
b. Min schedule rolled groove pipe to be joined: 4 in. or smaller - Schedule 10.

Product Designation	*Fitting Description*	*End Connection*	*Nominal Pipe Size, in.*	*Max Working Pressure, psi (kPa)*	*Remarks*

© 2007-2018 FM Approvals. All rights reserved.

SDG 100	90° Elbow	Grooved	1-1/4, 1-1/2, 2, 2-1/2, 3, 4, 5, 6, 8, 10, 12	500 (3450)	a
			76, 139.7, 165 mm	500 (3445)	a
			1 76, 133 mm	500 (3445)	b
			267.4, 318.5 mm	300 (2070)	b
SDT 100	90° Elbow	NPT	1/2, 3/4, 1, 1-1/4, 1-1/2, 2, 2-1/2, 3, 4	500 (3445)	a
			5, 6	300 (2070)	a
		BSP	1/2, 3/4, 1, 1-1/4, 1-1/2, 2, 2-1/2, 3, 4	500 (3445)	a
			5, 6	300 (2070)	a
SDT 101	90° Reducing Elbow	NPT	1/2 x 1/4, 3/8 3/4 x 1/4, 3/8, 1/2 1 x 1/4 x 3/8, 1/2, 3/4 1-1/4 x 3/8, 1/2, 3/4, 1 1-1/2 x 1/2, 3/4, 1, 1-1/4 2 x 1/2, 3/4, 1, 1-1/4, 1-1/2 2-1/2 x 1/2, 3/4, 1, 1-1/4, 1-1/2, 2 3 x 1/2, 3/4, 1, 1-1/4, 1-1/2, 2, 2-1/2 4 x 1/2, 3/4, 1, 1-1/4, 1-1/2, 2, 2-1/2, 3	500 (3445)	a
			1/2 x 1/4, 3/8 3/4 x 1/4, 3/8, 1/2 1 x 1/4 x 3/8, 1/2, 3/4 1-1/4 x 3/8, 1/2, 3/4, 1 1-1/2 x 1/2,		

© 2007-2018 FM Approvals. All rights reserved.

		BSP	3/4, 1, 1-1/4 2 x 1/2, 3/4, 1, 1-1/4, 1-1/2 2-1/2 x 1/2, 3/4, 1, 1-1/4, 1-1/2, 2 3 x 1/2, 3/4, 1, 1-1/4, 1-1/2, 2, 2-1/2 4 x 1/2, 3/4, 1, 1-1/4, 1-1/2, 2, 2-1/2, 3	500 (3445)	a
			6 x 4	300 (2070)	a
SDG 101	90° Reducing Elbow	Grooved	6 x 4 88.9 x 76.1 mm 114.3 x 76.1 mm 165.1 x 114.3 mm	500 (3445)	b
SDG 105	90° Short Radius Elbow	Grooved	2, 2-1/2, 3, 4, 6, 8 76, 139.1, 165mm	300 (2070)	a
			108, 159, 216.3 mm	300 (2070)	b
			114, 165 mm	365 (2510)	b
SDT 110	90° Street Elbow	NPT	1/2, 3/4, 1, 1-1/4, 1-1/2, 2 2-1/2, 3, 4	500 (3445)	a
			6	300 (2070)	a
		BSP	1/2, 3/4, 1, 1-1/4, 1-1/2, 2 2-1/2, 3, 4	500 (3445)	a
			6	300 (2070)	a
SDT 103	90° Reducing Street Elbow	BSP	3/4 x 1/2 1 x 3/4	500 (3445)	a
SDG 112	11.25° Elbow	Grooved	1-1/4, 1-1/2, 2, 3, 4, 6 76.1, 108, 139.7, 159, 165.1 mm	500 (3445)	b

© 2007-2018 FM Approvals. All rights reserved.

		Grooved	8	300 (2070)	b
SDG 225	22.5° Elbow	Grooved	1-1/4, 1-1/2, 2, 3, 4, 6 73, 76.1, 108, 139.7, 159, 165.1 mm	500 (3445)	b
		Grooved	8	300 (2070)	b
SDG 200	45° Elbow	Grooved	1-1/4, 1-1/2, 2, 2-1/2, 3, 4, 5, 6, 8, 10, 12 76.1, 165 mm	500 (3450)	a
			1 108, 139.7, 159 mm	500 (3450)	a
			216.3, 267.4, 318.5 mm	300 (2070)	b
SDT 200	45° Elbow	NPT	1/2, 3/4, 1, 1-1/4, 1-12, 2 2-1/2, 3, 4	500 (3445)	a
			5, 6	300 (2070)	a
		BSP	1/2, 3/4, 1, 1-1/4, 1-12, 2 2-1/2, 3, 4	500 (3445)	a
			5, 6	300 (2070)	a
SDG 12	Equal Tee	Grooved	1-1/4, 1-1/2,, 2, 2-1/2, 3, 4, 5, 6, 8, 10, 12 76/1. 165 mm	500 (3450)	a
			1 76, 133, 139.7 mm	500 (3445)	b
			267.4 mm	300 (2070)	b
SDT 12	Equal Tee	NPT	1/2, 3/4, 1, 1-1/4, 1-12, 2 2-1/2, 3, 4	500 (3445)	a
			5, 6	300 (2070)	a

© 2007-2018 FM Approvals. All rights reserved.

[illegible]	[illegible]	BSP	1/2, 3/4, 1, 1-1/4, 1-12, 2 2-1/2, 3, 4	500 (3445)	a
			5, 6	300 (2070)	a
SDG 53	Reducing Tee	Grooved	2 x 1-1/2 3 x 1, 1-1/2, 2, 2-1/2 4 x 1, 2, 2-1/2, 3 5 x 2, 3, 4 6 x 2, 2-1/2, 3, 4, 5 8 x 2, 3, 4, 5, 6	500 (3450)	a
			2 x 1 2-1/2 x 1-1/2, 2 3 x 1-1/4 4 x 1-1/2 60 x 48 mm 76.1 x 42.4, 48.3, 60.3 mm 88.9 x 48, 60, 73, 76.1 mm 108 x 60.3, 73, 88.9 mm 114.3 x 34, 60, 73, 76.1, 88.9 mm 133 x 60.3, 76.1, 108, 114.3 mm 139.7 x 48.3, 60.3, 76.1, 88.9, 114.3, 141 x 114.3 mm 141 x 114.3 mm 159 x 60.3, 76.1, 88.9, 114.3, 133 mm 168 x 60, 73, 89, 114, 141 mm	500 (3450)	b
			10 x 6, 8 12 x 8, 10 165.1 x 60.3, 76.1, 88.9, 114.3, 133, 139.7, 159 mm 168.3 x 76.1, 139.7 mm		

© 2007-2018 FM Approvals. All rights reserved.

			216.3 x 165.1 mm 219.1 x 60, 76.1, 89, 108, 114.3, 133, 139.7, 141.3, 159, 165.1, 168 mm 273 x 165.1 mm 323.9 x 165.1 mm	300 (2070)	b
		NPT	1/2 x 1/2 x 1/4, 3/8 1/2 x 1/4 x 1/2 1/2 x 3/8 x 1/2 3/4 x 3/4 x 1/4, 3/8, 1/2 3/4 x 1/2 x 1/2 x 3/4 1 x 1 x 1/4, 3/8, 1/2, 3/4 1 x 1/2 x 1/2, 3/4, 1 1 x 3/4 x 1/2, 3/4, 1 1-1/4 x 1/2 x 1/2, 3/4, 1, 1-1/4 1-1/4 x 3/4 x 3/4, 1, 1-1/4 1-1/4 x 1 x 1/2, 3/4, 1, 1-1/4, 1-1/2 1-1/4 x 1-1/4 x 3/8, 1/2, 3/4, 1 1-1/2 x 1/2 x 3/4, 1-1/2 1-1/2 x 3/4 x 1/2, 3/4, 1, 1-1/4, 1-1/2 1-1/2 x 1 x 1/2, 3/4, 1, 1-1/4, 1-1/2 1-1/2 x 1-1/4 x 1/2, 3/4, 1, 1-1/4, 1-1/2, 2 1-1/2 x 1-1/2 x 1/2, 3/4, 1, 1-1/4 2 x 1/2 x 2 2 x 3/4 x 2 2 x 1 x 1, 1-1/2, 2 2 x 1-1/4 x 1, 1-1/4, 1-1/2, 2 2 x 1-1/2 x 1/2, 3/4, 1,	500 (3445)	a

© 2007-2018 FM Approvals. All rights reserved.

SDT 53	Reducing Tee		1-1/4, 1-1/2, 2 2 x 2 x 1/2, 3/4, 1, 1-1/4, 1-1/2 2-1/2 x 1-1/2 x 2, 2-1/2 2-1/2 x 2 x 2, 2-1/2 2-1/2 x 2-1/2 x 1/2, 3/4, 1, 1-1/4, 1-1/2, 2 3 x 2 x 2, 3 3 x 3 x 1/2, 3/4, 1, 1-1/4, 1-1/2, 2, 2-1/2 4 x 4 x 1/2, 3/4, 1, 1-1/4, 1-1/2, 2, 2-1/2, 3		
			1/2 x 1/4, 3/8 3/4 x 1/4, 3/8, 1/2 1 x 1/4, 3/8, 1/2, 3/4 1-1/4 x 3/8, 1/2, 3/4, 1 1-1/2 x 3/8, 1/2, 3/4, 1, 1-1/4 2 x 3/8, 1/2, 3/4, 1, 1-1/4, 1-1/2 2-1/2 x 3/4, 1/2, 1, 1-1/4, 1-1/2, 2 3 x 1/2, 3/4, 1, 1-1/4, 1-1/2, 2, 2-1/2 4 x 1/2, 3/4, 1, 1-1/4, 1-1/2, 2, 2-1/2, 3 1/2 x 1/2 x 3/4, 1 3/4 x 3/4 x 1, 1-1/4 1 x 1 x 1-1/4 x 1-1/2, 2, 2-1/2 1-1/4 x 1-1/4 x 1-1/2, 2 1-1/2 x		

© 2007-2018 FM Approvals. All rights reserved.

			BSP	1-1/2 x 2, 2-1/2 2 x 2 x 2-1/2 2-1/2 x 2-1/2 x 3, 4 3/4, 1 x 1/2 x 1/2 1-1/4, 1-1/2 x 3/4 x 3/4 1-1/4 x 1/2 x 1/2 1-1/4 , 1-1/2, 2 x 1 x 1 1-1/2, 2 x 1-1/4 x 1-1/4 2 x 1-1/2 x 1-1/2 2-1/2, 3 x 2 x 2 3/4 x 1/2 x 3/4 1 x 1/2 x 1, 1 x 3/4 x 1, 1 x 1/4 x 1 1-1/4 x 1/2 x 1-1/4, 1-1/4, 1-1/4 x 3/4 x 1-1/4, 1-1/4 x 1 x 1-1/4 1-1/2 x 1/2 x 1-1/2, 1-1/2 x 3/4 x 1-1/2, 1-1/2 x 1 x 1-1/2, 1-1/2 x 1-1/4 x 1-1/2 2 x 1/2 x 2, 2 x 3/4 x 2, 2 x 1 x 2, 2 x 1-1/4 x 2, 2 x 1-1/2 x 2 2-1/2 x 1-1/2 x 2-1/2, 2-1/2 x 2 x 2-1/2 3/4 x 1/2 x 1, 1 x 1/2 x 3/4, 1 x 3/4 x 1/2 1-1/4 x 1/2 x 3/4, 1 1-1/4 x 3/4 x 1/2, 1 1-1/4 x 1 x 1/2, 3/4 1-1/2 x 3/4 x 1, 1-1/4 1-1/2 x 1 x 1/2, 1-1/4 1-1/2 x 1-1/4 x 1/2, 3/4, 2 2 x 1 x 1-1/2 2 x 1-1/4 x	500 (3445)	a	

© 2007-2018 FM Approvals. All rights reserved.

			1, 1-1/22 x 1-1/2 x 3/4, 1, 1-1/4 2-1/2 x 2 x 1/2, 1, 1-1/4		
			6 x 2, 3, 4	300 (2070)	a
	Bullhead Tee	NPT	3/8 x 3/8 x 1/2 1/2 x 1/2 x 3/4, 1 3/4 x 3/4 x 1 1 x 1 x 1-1/4, 1-1/2, 2 1-1/4 x 1-1/4 x 1-1/2, 2 1-1/2 x 1-1/2 x 2 2 x 2 x 2-1/2	500 (3445)	a
SDG 13	Equal Cross	Grooved	1-1/4, 1-1/2, 2, 2-1/2, 3, 4, 5, 6, 8, 10, 12 76.1, 165 mm	500 (3445)	a
			60, 73, 76, 89, 108, 114, 139.7, 141, 159, 165, 168 mm	500 (3445)	b
			219 mm	300 (2070)	b
SDT 13	Equal Cross	NPT	1/2, 3/4, 1, 1-1/4, 1-1/2, 2, 2-1/2, 3, 4	500 (3445)	a
			5, 6	300 (2070)	a
		BSP	1/2, 3/4, 1, 1-1/4, 1-1/2, 2, 2-1/2, 3, 4	500 (3445)	a
SDG 13R	Reducing Cross	Grooved	3 x 2 4 x 2, 3 8 x 2, 4 139.7 x 114.3 mm 159 x 114.3 mm 165.1 x 60.3, 76.1, 88.9, 114.3 mm	500 (3445)	b

© 2007-2018 FM Approvals. All rights reserved.

			219.1, 139.7, 159, 165.1 mm	300 (2070)	b
SDT 51	Reducing Cross	NPT	3/4 x 1/2 1 x 3/4 1-1/4 x 3/4, 1 1-1/2 x 3/4, 1, 1-1/4 2 x 3/4, 1, 1-1/4, 1-1/2 2 x 1/2 x 1, 1-1/4, 1-1/2, 2 3 x 1, 1-1/4, 1-1/2, 2, 2-1/2 4 x 2-1/2, 3	500 (3445)	a
		BSP	3/4 x 1/2 1-1/2 x 3/4 1-1/4 x 1/2, 3/4, 1 1-1/2 x 1/2, 3/4, 1, 1-1/4 2 x 3/4, 1, 1-1/4, 1-1/2 2 x 1/2 x 1, 1-1/4, 1-1/2, 2 3 x 3/4, 1, 1-1/4, 1-1/2, 2 4 x 1, 1-1/4, 1-1/2, 2, 2-1/2, 3	500 (3445)	a
SDT 22	Coupling	NPT	1/2, 3/4, 1, 1-1/4, 1-1/2, 2, 2-1/2, 3, 4	500 (3445)	a
		BSP	1/2, 3/4, 1, 1-1/4, 1-1/2, 2, 2-1/2, 3, 4	500 (3445)	a
			5, 6	300 (2070)	a
SDG 33	Eccentric Reducer	Grooved	4 x 2, 3 6 x 3, 4 8 x 4 88.9 x 60.3 mm 108 x 76.1, 88.9 mm 114.3 x 76.1 mm 139.7 x 114.3 mm 159 x 108, 114.3 mm 165.1 x	300 (2070)	b

© 2007-2018 FM Approvals. All rights reserved.

			88.9, 114.3, 139.7 mm 168.3 x 139.7 mm		
			219 x 168 mm 273 x 219 mm	365 (2510)	b
SDT 30	Reducing Socket	NPT	1/2 x 3/8 3/4 x 3/8, 1/2 1 x 3/8, 1/2, 3/4 1-1/4 x 1/2, 3/4, 1 1-1/2 x 1/2, 3/4, 1, 1-1/4 2 x 1/2, 3/4, 1, 1-1/4, -1/2 2-1/2 x 1-1/2, 2 3 x 1-1/2, 2, 2-1/2 4 x 2, 3	500 (3445)	a
		BSP	1/2 x 1/4, 3/8 3/4 x 1/4, 3/8, 1/2 1 x 1/4, 3/8, 1/2, 3/4 1-1/4 x 1/4, 3/8, 1/2, 3/4, 1 1-1/2 x /4, 3/8, 1/2, 3/4, 1, 1-1/4 2 x 1/2, 3/4, 1, 1-1/4, 1-1/2 2-1/2 x 1/2, 3/4, 1, 1-1/4, 1-1/2, 2 3 x 1/2, 3/4, 1, 1-1/4, 1-1/2, 2, 2-1/2	500 (3445)	a
	Concentric Reducer	Grooved	2 x 3/4, 1, 1-1/4, 1-1/2 2-1/2 x 1, 1-1/4, 1-1/2, 2 3 x 3/4, 1, 1-1/2, 2, 2-1/1 4 x 1, 1-1/2, 2, 2-1/2, 3 5 x 3, 4 6 x 1, 2, 2-1/2, 3, 4, 5	500 (3450)	a

© 2007-2018 FM Approvals. All rights reserved.

			8 x 2-1/2, 3, 4, 5, 6		
SDG 35	Concentric Reducer	Grooved	1-1/4 x 1 1-1/2 x 1, 1-1/2 4 x 1-1/4 5 x 2-1/2 76 x 42, 48, 60 mm 89 x 42, 76 mm 108 x 60.3, 73, 76 mm 114.3 x 76.1 mm 133 x 108, 114.3 mm 139.7 x 60.3, 76.1, 88.9, 114.3 mm 141 x 89, 114 mm 159 x 60.3, 76.1, 88.9, 108, 114.3, 133 mm 165.1 x 60.3, 76.1, 88.9, 114.3, 139.7 mm 168.3 x 76.1, 139.7 mm	500 (3450)	b
			216.3 x 114.3, 165.1 mm 219.1 x 108, 139.7, 159, 165.1 mm 273 x 159, 165.1, 168.3, 219.1 mm 322.9 x 219.1, 273 mm	300 (2070)	b
			2 x 3/4, 1, 1-1/4, 1-1/2 2-1/2 x 1, 1-1/4, 1-1/2, 2 3 x 3/4, 1, 1-1/2, 2, 2-1/2 4 x 1, 1-1/2, 2, 2-1/2, 3 5 x 3, 4 6 x 2, 2-1/2, 3, 4, 5 8 x 2-1/2, 3, 4, 5, 6	500 (3450)	a

© 2007-2018 FM Approvals. All rights reserved.

SDG 37	Concentric Reducer	Grooved x Female NPT	4 x 1/2, 3/4, 1-1/2 8 x 1-1/2, 2 76 x 21, 27, 34, 42, 48, 60 mm 89 x 21, 76 mm 108 x 34, 42, 48, 60, 76, 89 mm 114 x 76 mm 133 x 48, 76 mm 139.7 x 27, 34, 42, 48, 60, 76, 89, 114 mm 141.3 x 89, 114 mm 159 x 27, 34, 42, 48, 60, 89, 114 mm 165 x 21, 27, 34, 42, 48, 60, 76, 89, 114 mm 219 x 76 mm	500 (3450)	b
SDT 57	Bushing	NPT	1/2 x 1/4, 3/8 3/4 x 3/8, 1/2 1 x 1/2, 3/4 1-1/4 x 1/2, 3/4, 1 1-1/2 x 3/8, 1/2, 3/4, 1, 1-1/4 2 x 3/8, 1/2, 3/4, 1, 1-1/4, 1-1/2 2-1/2 x 1/2, 3/4, 1, 1-1/4, 1-1/2, 2 3 x 1/2, 3/4, 1, 1-1/4, 1-1/2, 2, 2-1/2 3-1/2 x 2-1/2, 3 4 x 3/4, 1, 1-1/4, 1-1/2, 2, 2-1/2, 3, 3-1/2	500 (3445)	a
			5 x 2, 3, 4 6 x 2, 2-1/2, 3, 3-1/2, 4, 5	300 (2070)	a

© 2007-2018 FM Approvals. All rights reserved.

		BSP	1/2 x 1/4, 3/8 3/4 x 1/4, 3/8, 1/2 1 x 1/4, 3/8, 1/2, 3/4 1-1/4 x 1/4, 3/8, 1/2, 3/4, 1 1-1/2 x 1/4, 3/8, 1/2, 3/4, 1, 1-1/4 2 x 1/4, 3/8, 1, 1-1/4, 1-1/2 2-1/2 x 1/2, 3/4, 1-1/2, 2 3 x 2, 2-1/2 3-1/2 x 3 4 x 3/4, 1, 1-1/4, 1-1/2, 3	500 (3445)	a
			5 x 3, 4 6 x 2, 2-1/2, 5	300 (2070)	a
SDT 111	Hex Nipple Reducing	BSP	1/2 x 1/4, 3/8 3/4 x 1/4, 3/8, 1/2 1 x 1/2, 3/4 1-1/4 x 1/2, 3/4, 1 1-1/2 x 1/2, 3/4, 1, 1-1/4 2 x 1/2, 3/4, 1, 1-1/4, 1-1/2 2-1/2 x 1, 1-1/4, 1-1/2 3 x 1-1/2, 2, 2-1/2 4 x 2, 4 x 2-1/2, 4 x 3	500 (3445)	a
SDG 14	End Cap	Grooved	1-1/4, 1-1/2, 2, 2-1/2, 3, 4, 5, 6, 8, 10, 12 76.1, 165 mm	500 (3450)	a
			1-1/4, 1-1/2, 2, 2-1/2, 3, 4, 5, 6, 8, 10, 12 76.1, 89, 114, 140, 165 mm	500 (3450)	b
		NPT	1/2, 3/4, 1, 1-1/4, 1-1/2, 2, 2-1/2, 3, 4	500 (3445)	a

© 2007-2018 FM Approvals. All rights reserved.

SDT 14	End Cap		5, 6	300 (2070)	a
		BSP	1/2, 3/4, 1, 1-1/4, 1-1/2, 2, 2-1/2, 3, 4	500 (3445)	a
			5, 6	300 (2070)	a
SDG 16	Flange Adapter	Flanged x Grooved	2, 2-1/2, 3, 4, 5, 6, 8 76.1, 165 mm	500 (3450)	a
			1, 1-1/4, 1-1/2, 10, 12 108, 133, 139.7, 159 mm	300 (2070)	a
			60, 73, 76.1, 89, 114 mm	365 (2510)	b
			139.7, 141.3, 165, 168, 219, 273, 324 mm	225 (1550)	b
SDT 59F	Union Flat Seat without gasket	BSP	1/2, 3/4, 1, 1-1/4, 1-1/2, 2, 2-1/2, 3, 4	500 (3445)	a
SDT 59C	Union Conical Joint Iron to Iron	BSP	1/2, 3/4, 1, 1-1/4, 1-1/2, 2, 2-1/2, 3, 4	500 (3445)	a
SDG 102	Short Radius Tee	Grooved	2, 2-1/2, 3, 4, 6, 8 76, 139.7, 165 mm	300 (2070)	a
			108, 159, 216.3 mm	300 (2070)	b
			114, 165 mm	365 (2510)	b

		NPT	1/2, 3/4, 1, 1-1/4, 1-1/2, 2, 2-1/2	500 (3445)	a

© 2007-2018 FM Approvals. All rights reserved.

SDT 11	Hex Nipple	BSP	1/2, 3/4, 1, 1-1/4, 1-1/2, 2, 2-1/2, 3, 4	500 (3445)	a
			5, 6	300 (2070)	a

Remarks:
a. Malleable Iron Fittings
b. Ductile Iron Fittings

Company Name:	Shield Fire Safety and Security Ltd
Company Address:	Redburn House, 2a Tonbridge Rd, Romford, Essex, RM3 8QE, United Kingdom
Company Website:	http://shieldglobal.com
New/Updated Product Listing:	No
Listing Country:	United Kingdom
Certification Type:	FM Approved
Primary Class of Work:	1920-Coupling & Fitting, All Type

© 2007-2018 FM Approvals. All rights reserved.

Pipe Fittings

These fittings are suitable for interconnecting piping, valves and other components in both wet and dry automatic sprinkler systems. Installation should be according to applicable sprinkler system fabrication rules. These rules limit the minimum size of sprinkler piping to 1 in., nominal. FM Approved pipe fittings of smaller sizes are intended for use as valve trim, gauge connections, and for other peripheral service. The water flow path of the sprinkler system cannot be designed using smaller sizes than 1 in., nominal. Unless otherwise noted in the listing, these fittings have 175 psi (1205 kPa) rated working pressure.

Threaded connections on fittings can be made to FM Approved threadable thinwall pipe or to Schedule 40 pipe. Refer to the "Steel Pipe" listings for a summary of the various types of FM Approved steel pipe suitable for threading or grooving."

The fittings manufacturer's installation instructions must be observed in all cases. When connections are made to FM Approved pipe, the pipe manufacturer's installation instructions must also be followed.

Unless otherwise stated below, the maximum ambient temperature to which these fittings should be subjected is 225°F (107°C).

Fittings, Side Outlet, Rigid

These fittings allow installation of a perpendicular branch line of reduced size, while joining inline pipes of equal diameters. These fittings bolt over a hole in the run pipe, and allow installation of a perpendicular branch line of reduced size. The maximum branch line size is one pipe size reduced from the run pipe size.

SDG 44, SDG 40, SDG 42, SDG 49, SDG 47

Product Designation	*Fitting Description*	*Nominal Pipe Size, in.*	*Remarks*	*Max Rated Pressure, psi (kPa)*
SDG 44	Mechanical Tee, Grooved Outlet	2 x 1-¼, 1-½ 2-½ x 1-¼, 1-½ 76 x 1, 1-¼, 1-½ 3 x 1, 1-¼, 1-½, 2 4 x 1, 1-¼, 1-½, 2, 2-½, 3 133 x 3, 139.7 x 1-1/4, 1-1/2, 2, 2-½, 3, 4 159 x 108, 4 5 x 1-¼, 1-½, 2, 2-½, 3 165 x 2, 2-½, 3, 4 6 x 1-¼, 1-½, 2, 2-½, 3, 4 8 x 2, 2, 2-1/2, 76, 3, 108, 4 10 x 108, 4	a, c	300 (2070)
SDG 44	Mechanical Tee, Grooved Outlet	89 x 34, 42, 48, 60 mm	a, c	365 (2510)
		114 x 34, 42, 48, 60, 73, 76, 89 mm 133 x 89 mm 140 x 42, 48, 60, 76, 89 mm 159 x 108, 114 mm 165 x 42, 48, 60, 76, 89, 108, 114 mm 168 x 42, 48, 60, 73, 76, 89, 114 mm 219 x 60, 73, 76, 89, 108, 114 mm	a, c	300 (2070)
SDG 40	Mechanical Tee, Grooved Outlet	1-1/4 x 1/2, 3/4, 1 1-1/2 x 1/2, 3/4, 1 2 x 1/2, 3/4, 1 2-1/2 x 1/2, 3/4, 1 76 x 1/2, 3/4, 1 3 x 1 4 x 1, 1-1/4, 1-1/2 6 x 1, 1-1/4, 1-1/2	a, c	300 (2070)
SDG 42	Mechanical Tee, Threaded Outlet	2 x 1/2, 3/4 2-1/2 x 1/2, 3/4 3 x 1/2, 3/4 76 x 1/2, 3/4 4 x 1/2, 3/4 108 x 1/2, 3/4, 1, 1-1/4, 1-1/2, 2, 76 133 x 1/2, 3/4, 1, 1-1/4, 1-1/2, 2, 76, 3 139 x 1/2, 3/4 , 4	a, b, c	300 (2070)

© 2007-2018 FM Approvals. All rights reserved.

		159 x 1/2, 3/4, 1, 1-1/4, 1-1/2, 2 219 x 1, 1-1/4, 1-1/2, 2, 2-1/2, 76, 3, 4 10 x 1-1/2, 2, 76, 3, 4		
SDG 42	Mechanical Tee, Threaded Outlet	2 x 1, 1-¼, 1-½ 2-½ x 1, 1-¼, 1-½ 76 x 1, 1-¼, 1-½ 3 x 1, 1-¼, 1-½, 2 4 x 1, 1-¼, 1-½, 2, 2-½, 3 139.7 x 1, 1-¼, 1-½, 2 5 x 1-¼, 1-½, 2, 2-½, 3 165 x 1, 1-¼, 1-½, 2, 2-½, 3 6 x 1-¼, 1-½, 2, 2-½, 3, 4	a, b, c	300 (2070)
SDG 42	Mechanical Tee, Threaded Outlet	89 x 21, 27, 34, 42, 48, 60 mm	a, b, c, d	365 (2510)
		114 x 21, 27, 34, 42, 48, 60, 73, 76, 89 mm 168 x 34, 42, 48, 60, 73, 76, 89, 114 mm 219 x 34, 42, 48, 60, 73, 76, 89, 114 mm	a, b, c, d	300 (2070)
		108 x 21, 27, 34, 42, 48, 60, 76 mm 133 x 21, 27, 34, 42, 48, 60, 76, 89 mm 140 x 21, 27, 34, 42, 48, 60, 76, 89, 114 mm 159 x 21, 27, 34, 42, 48, 60, 76, 89, 114 mm 165 x 21, 27, 34, 42, 48, 60, 76, 89, 114 mm	a, c, d	300 (2070)
SDG 49	Mechanical Cross, Grooved Outlet	2 x 1-¼, 1-½ 2-½ x 1-¼, 1-½ 76 x 1-¼, 1-½ 3 x 1-¼, 1-½, 2 4 x 1-¼, 1-½, 2, 2-½, 3 139.7 x 2, 2-½, 3 5 x 1-¼, 1-½, 2, 2-½, 3 165 x 2, 2-½, 3 6 x 1-¼, 1-½, 2, 2-½, 3, 4	a, c	300 (2070)
SDG 47	Mechanical Cross, Threaded Outlet	2 x 1, 1-¼, 1-½ 2-½ x 1, 1-¼, 1-½ 76 x 1, 1-¼, 1-½ 3 x 1, 1-¼, 1-½, 2 4 x 1, 1-¼, 1-½, 2, 2-½, 3 139.7 x 1, 1-¼, 1-½, 2, 2-½, 3 5 x 1-¼, 1-½, 2, 2-½, 3 165 x 1, 1-¼, 1-½, 2, 2-½, 3 6 x 1-¼, 1-½, 2, 2-½, 3, 4	a, b, c	300 (2070)

Remarks:

a. For use on Schedule 10 and heavier steel sprinkler pipe.
b. Approved when supplied with NPT female threads.
c. Approved when supplied with EPDM gasket.
d. Approved when supplied with BSP or DIN female threads.

Company Name:	Shield Fire Safety and Security Ltd
Company Address:	Redburn House, 2a Tonbridge Rd, Romford, Essex, RM3 8QE, United Kingdom
Company Website:	http://shieldglobal.com
New/Updated Product Listing:	No
Listing Country:	United Kingdom

© 2007-2018 FM Approvals. All rights reserved.

Certification Type:	FM Approved
Primary Class of Work:	1920-Coupling & Fitting, All Type

© 2007-2018 FM Approvals. All rights reserved.

Grooved Couplings or Fittings

Grooved couplings are used to join pipe and fittings in both wet and dry sprinkler systems. Unless otherwise noted, these couplings are intended to provide some flexibility in piping systems. Typical applications are in sprinkler risers, in feed mains passing through walls from one building area to another, in locations subject to earthquakes, in the discharge line from aboveground pump suction tanks, in new connections to existing feed mains and in air or water fire service lines subject to excessive vibration or difficult alignment.

Unless otherwise noted, these couplings are limited to use with rolled or cut groove-ended pipe, valves and fittings, at a minimum rated working pressure of 175 psi (1205 kPa) and are suitable for aboveground service. Higher rated pressures are noted in the text of the listing. Selection of pipe schedules for use with grooved pipe couplings should be made according to applicable FM Global Property Loss Prevention Data Sheets installation standards. These pipe schedules determine system pressure ratings and may take precedence over the higher rated working pressures listed for some couplings.

Installation must be made according to the manufacturer's instructions and requirements. Where couplings are used to join FM Approved pipe, the pipe manufacturer's installation instructions and requirements must also be observed. Grooves should be made according to ANSI/AWWA C606 (latest edition), "Grooved and Shouldered Joints", unless otherwise specified.

FM Approved grooved pipe couplings joining steel pipe may be used in underground service, subject to the installation restrictions placed upon the pipe and to the coupling manufacturer's recommendations and requirements.

Unless otherwise stated in the listing, these couplings have been evaluated for a maximum ambient temperature of 225°F (107°C), suitable for use in normal warehouse protection. For special applications, temperatures, or environments, the manufacturer's recommendations and requirements are to be followed.

Grooved Split Flanges-Flexible

Split Flanged-These fittings join pipe, valves or fittings having equal diameters.

Model SDG 15

Product Designation	*Fitting Description*	*Nominal Pipe Size, in.*	*Remarks*	*Max Rated Pressure, psi (kPa)*
SDG 15	Split Flange	1 1/2, 2, 2 1⁄2, 3, 4, 5, 6, 8, 10, 12 76.1, 108, 133, 139, 159, 165 mm	a, b, c, d, e	300 (2070)

Remarks:
a. Minimum schedule cut groove pipe to be joined: 6 in. NPS and smaller - Schedule 40; 8 in. NPS and larger - Schedule 30.
b. Minimum schedule rolled groove pipe to be joined: 6 in. NPS and smaller - Schedule 10S; 8 in. NPS and larger 0.188 in. (5 mm) wall.
c. Approved when supplied with EPDM gasket.
d. Approved when supplied with an ISO PN10 bolt pattern.
e. Approved when used with GB/T3092 regular and extra heavy pipe, ISO 4200, and BS 1387 Medium and Heavy pipe.

Company Name:	Shield Fire Safety and Security Ltd
Company Address:	Redburn House, 2a Tonbridge Rd, Romford, Essex, RM3 8QE, United Kingdom
Company Website:	http://shieldglobal.com
New/Updated Product Listing:	No
Listing Country:	United Kingdom
Certification Type:	FM Approved
Primary Class of Work:	1920-Coupling & Fitting, All Type

© 2007-2018 FM Approvals. All rights reserved.

Pipe Hangers

Pipe hangers are used to support a sprinkler piping system from the building structure. Two or more listed components may be required to form a complete hanger assembly. The specific components required depend upon the type of building construction and the pipe size.

Loop Hangers

A type of pipe hanger which provides vertical adjustment that utilizes a formed strap looped around the pipe.

Shield Fire Safety, Loop Hangers

Product Designation	*Hanger Rod Size, in. (mm)*	*Component Description*	*For Nominal Pipe Sizes, in.*	*Remarks*
SD_HB	3/8 (10)	Loop Hanger	3/4 through 4	a
SD_HB	1/2 (12)	Loop Hanger	5 through 8	a

Remarks:
a.) The SD-HB is FM Approved as a 200R when made with an O-ring in place of a flared nut and as a 200S with a modified ring nut.

Company Name:	Shield Fire Safety and Security Ltd
Company Address:	Redburn House, 2a Tonbridge Rd, Romford, Essex, RM3 8QE, United Kingdom
Company Website:	http://shieldglobal.com
New/Updated Product Listing:	No
Listing Country:	United Kingdom
Certification Type:	FM Approved
Primary Class of Work:	1951-Pipe hangers For AS Sys

© 2007-2018 FM Approvals. All rights reserved.

Pipe Hangers

Pipe hangers are used to support a sprinkler piping system from the building structure. Two or more listed components may be required to form a complete hanger assembly. The specific components required depend upon the type of building construction and the pipe size.

Clevis Hangers

A type of pipe hanger which provides vertical adjustment, consisting of a clevis type top bolted to a formed steel bottom strap.

Shield Fire Safety, Clevis Hangers

Product Designation	*Hanger Rod Size, in. (mm)*	*Component Description*	*For Nominal Pipe Sizes, in.*	*Remarks*
SD-HC	3/8 (10)	Clevis Hanger	3/4	-
SD-HC	3/8 (10)	Clevis Hanger	1	-
SD-HC	3/8 (10)	Clevis Hanger	1 1/4	-
SD-HC	3/8 (10)	Clevis Hanger	1 1/2	-
SD-HC	3/8 (10)	Clevis Hanger	2	-
SD-HC	3/8 (10)	Clevis Hanger	2 1/2	-
SD-HC	3/8 (10)	Clevis Hanger	3	-
SD-HC	3/8 (10)	Clevis Hanger	3 1/2	-
SD-HC	3/8 (10)	Clevis Hanger	4	-
SD-HC	½ (12)	Clevis Hanger	5	-
SD-HC	½ (120)	Clevis Hanger	6	-
SD-HC	½ (12)	Clevis Hanger	8	-
SD-HC	5/8 (20)	Clevis Hanger	10	-
SD-HC	5/8 (20)	Clevis Hanger	12	-
SD-HC	1/2 (12)	Clevis Hanger	2 1/2 through 3 1/2	-
SD-HC	5/8 (16)	Clevis Hanger	4, 5	-
SD-HC	3/4 (20)	Clevis Hanger	6	-
SD-HC	7/8 (22)	Clevis Hanger	8	-

Company Name:	Shield Fire Safety and Security Ltd
Company Address:	Redburn House, 2a Tonbridge Rd, Romford, Essex, RM3 8QE, United Kingdom

© 2007-2018 FM Approvals. All rights reserved.

Company Website:	http://shieldglobal.com
New/Updated Product Listing:	No
Listing Country:	United Kingdom
Certification Type:	FM Approved
Primary Class of Work:	1951-Pipe hangers For AS Sys

© 2007-2018 FM Approvals. All rights reserved.

Irrigation and Hydraulics Laboratory
Faculty of Engineering - Cairo University

معمل الري والهيدروليكا
كلية الهندسة – جامعة القاهرة

التاريخ: ٢٠١٨/٥/٣١

السادة / شركة نافكو مصر لمعدات مكافحة الحريق

تحية طيبة وبعد،،،

بالإشارة إلى خطاب سيادتكم بتاريخ ٢٠١٨/٥/٢٨ الخاص بإجراء اختبار الضغط على العينات الموردة من طرفكم من قطع ووصلات مواسير

Grooved Fittings – Ductile Iron – UL.FM – Origin: UK – Brand: Shield

تحت ضغط اختبار ٣٥ جوي، المناظر لضغط تشغيل ٢٣,٣٣ جوي على القطع التالية:

1- Grooved Coupling 4" & 2.5"

2- Grooved Tee 4"

3- Grooved Reducer 4"*2.5"

4- Grooved Cap 4"& 2.5"

نود أن نحيط سيادتكم علما بأن القطع تم إعطاءها الرقم الكودي ٢٠١٨/١٠٤ بواسطة المعمل، وقد اجتازت اختبار الضغط عند مرة ونصف ضغط التشغيل أي عند ضغط ٣٥ بار بدون حدوث أي فقد في الضغط أو تسريب أو تشوهات فيها.

مع وافر التحية والتقدير،،،

مدير المعمل

أ.د. أشرف حسن مهيب غانم

عميد الكلية

يعتمد توقيع المدير

أ.د. السيد محمد تاج الدين

المركز القومى للبحوث
الدقى . القاهرة . جمهورية مصر العربية
وحدة التحاليل والخدمات العلمية المركزية
معمل اختبار المواد

NATIONAL RESEARCH CENTRE
TAHRIR St. DOKKI, CAIRO, EGYPT
Centeral Unit For Analysis And
Scientifical Services (CUASS)
Material Test Lab.

تقـــرير الاختبـــارات

رقم التقرير	:	MO1 9622 07 2018
إسم الشركة أو العميل	:	شركـــة نافكـــو مصـــر
تاريخ الطلب	:	٢٠١٨/٧/٩
المنتج المطلوب إختباره	:	طلب إجراء أختبار الضغط الهيدروستاتيكى على عينة Ductile iron grooved fitting UL.FM shield UK .
النتائج	:	جميع نتائج الاختبارات مدونة ومبينة بالتفصيل فى صفحات التقرير المرفقة (عدد صفحات التقرير ٤ صفحات) .
الفريق العامل كتابة كمبيوتر وحاسب آلى	:	كمبيوتر / ابتسام سيد محمود كمبيوتر/ نجلاء محمد عبد السميع كمبيوتر/ نهى سمير ربيع محمد كمبيوتر/ سارة عبد الرحيم اسماعيل
القائمون بالتشغيل والاختبارات		هندسة مساعد / فاطمة الزهراء فكرى هندسة مساعد / احمد سيد ابراهيم كيميائى / عمرو عبد الرحمن الشافعى
اشـــراف		أ.د / مصطفى زكى مصطفى أ.د/ أبو الفتوح عبد المنعم عبد الحكيم
المدير المسئول	:	**الاستاذ الدكتور / مصطفى زكى مصطفى** **رئيس مجلس ادارة وحدة التحاليل والخدمات العلمية المركزية ورئيس قسم السيراميك والبلاستيك والمواد الصلبة وممثل الادارة العليا ومدير الجودة بالوحدة**
تاريخ الاصدار	:	٢٠١٨/٧/١١
ظروف التشغيل والاختبارات	:	كل الاختبارات قد تمت عند ٢٣ °م ودرجة رطوبة مابين ٥٠ – ٦٠% مع إجراء جميع المعايرات اللازمة لأجهزة القياس بصفة دائمة ومستمرة .

(٩٦٢٢ -٤/١)

شارع التحرير - الدقى - القاهرة
مباشر : ٣٣٣٨٧٨٠٣ داخلى ١٨١٠ وفاكس ١٤٢٤
٣٣٣٧١٣٦٢ - ٣٣٣٧١٦١٥
٣٣٣٥٥١٩٢ - ٣٧٦٠٧٥٤١

المركز القومى للبحوث
الدقى . القاهرة . جمهورية مصر العربية
وحدة التحاليل والخدمات العلمية المركزية
معمل اختبار المواد

NATIONAL RESEARCH CENTRE
TAHRIR St. DOKKI, CAIRO, EGYPT
Centeral Unit For Analysis And
Scientifical Services (CUASS)
Material Test Lab.

السـادة/ شركـة نافكـو مصـر

تحية طيبة ... وبعد ...

بالإشارة الى خطابكم الوارد بتاريخ ٢٠١٨/٧/٩ بشأن إجراء أختبار الضغط الهيدروستاتيكى على عينة *Ductile iron grooved fitting UL.FM shield UK* تتكون من القطع التالية :-

1- Grooved coupling 4" &2.5"

2- Grooved tee 4"

3- Grooved reducer 4"X2.5"

4- Grooved cap 4" & 2.5"

5- Grooved mechanical tee 4" X 2.5"

و فيما يلى جميع النتائج الكلية للاختبارات التى تمت على العينة الواردة من قبلكم

علما بأن هذه النتائج تمثل فقط العينة الواردة الى قسم السيراميك والبلاستيك والمواد الصلبة بمعمل اختبار المواد بالمركز القومي للبحوث .

(٩٣٤٤-٤/٢)

شارع التحرير - الدقى - القاهرة
مباشر : ٣٣٣٨٧٨٠٣
داخلى ١٨١٠
وفاكس ١٤٢٤
٣٣٣٧١٦١٥ - ٣٣٣٧١٣٦٢
٣٣٣٥٥١٩٢ - ٣٧٦٠٧٥٤١

NATIONAL RESEARCH CENTRE
TAHRIR St. DOKKI, CAIRO, EGYPT
Centeral Unit For Analysis And
Scientifical Services (CUASS)
Material Test Lab.

المركز القومى للبحوث
الدقى . القاهرة . جمهورية مصر العربية
وحدة التحاليل والخدمات العلمية المركزية
معمل اختبار المواد

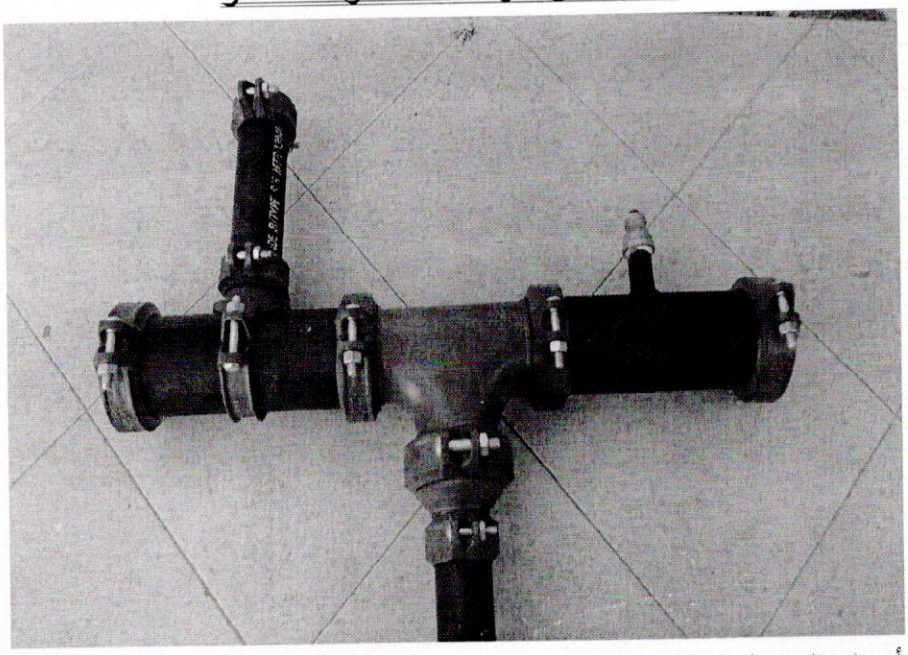
نتائج أختبار الضغط الهيدروستاتيكى

على عينة *Ductile iron grooved fitting UL.FM shield UK* تتكون من القطع

(Grooved coupling 4" &2.5" , Grooved tee 4" , Grooved reducer 4"X2.5" ,

Grooved cap 4" & 2.5" , Grooved mechanical tee 4" X 2.5")

والواردة من شركـــة نافكـــو مصـــــر



* تم عمل أختبار الضغط الهيدروستاتيكى عند ضغط PSI٥٠٠ (٣٥,١بار) لمدة ساعة فى درجة حراره ٢٣°م و لم يحدث انفجار بالعينة المختبره ولم يلاحظ أى ترشيح أو أنبعاج أو تسريب .

(٩٣٤٤-٤/٣)

شارع التحرير - الدقى - القاهرة
مباشر : ٣٣٣٨٧٨٠٣ وفاكس
داخلى ١٨١٠ ١٤٢٤
٣٣٣٧١٦١٥ - ٣٣٣٧١٣٦٢
٣٣٣٥٥١٩٢ - ٣٧٦٠٧٥٤١

المركز القومى للبحوث
الدقى . القاهرة . جمهورية مصر العربية
وحدة التحاليل والخدمات العلمية المركزية
معمل اختبار المواد

NATIONAL RESEARCH CENTRE
TAHRIR St. DOKKI, CAIRO, EGYPT
Centeral Unit For Analysis And
Scientifical Services (CUASS)
Material Test Lab.

ولقد أعطى لكم هذا التقرير بناء على طلبكم ممثلا فقط نتائج أختبار الضغط الهيدروستاتيكى على عينة *Ductile iron grooved fitting UL.FM shield UK* ، والواردة من شركة نافكو مصر ، ودون أدنى مسئولية تجاه قسم السيراميك والبلاستيك والمواد الصلبة بمعمل اختبار المواد بالمركز القومى للبحوث فى تحديد و انتقاء العينات المرسلة للاختبار علما بأن نتائج هذا التقرير تمثل فقط العينات الواردة ولا تمثل أى حال من الاحوال أى نوعية مماثلة ومخزنة ومشونة بمواقع التطبيق والتنفيذ والاستخدام ولا يجوز استخدام هذا التقرير فى الدعاية والإعلان عن المنتج المختبر الا بعد الرجوع الى المركز القومي للبحوث والاتفاق على ذلك .

مع ملاحظة ألا يتم نقل وتصوير هذا التقرير بما يشمله من نتائج إلا متكاملاً وموافقة مسبقة من قسم السيراميك والبلاستيك والمواد الصلبة بمعمل إختبار المواد بالمركز القومى للبحوث بالقاهرة .

رئيس مجلس إدارة وحدة التحاليل والخدمات العلمية

والمشرف على معمل اختبار المواد

أ.د. مصطفى زكى مصطفى

٣٣٣٧١٣٦٢ - ٣٣٣٧١٦١٥ داخلى ١٨١٠ مباشر : ٣٣٣٨٧٨٠٣ شارع التحرير - الدقى - القاهرة
٣٣٣٥٥١٩٢ - ٣٧٦٠٧٥٤١ وفاكس ١٤٢٤

MTL
Mechanical Testing Laboratory
Metallurgical Dept. – Building No. 32
Faculty of Engineering – Cairo University

معمل الاختبارات الميكانيكية
قسم الفلزات - مبنى رقم ٣٢
كلية الهندسة – جامعة القاهرة

Test Report

Test Request #	779	Specimen(s) ID	2-18/303

Date of request	28/5/2018	**Number of pages**	3
Test(s) Required	Chemical + Hardness + micro structure		
Test item description	Grooved Reducer 4"* 2.5"		
Owner	NAFFCO		
Date of Performing Test	20/6/2018	**Test Report Date**	25/6/2018
Temperature, °C	20	**Humidity, %**	39

- **Specimen details and conditions (shown above) are supplied by the customer; hence the lab bears no responsibility regarding these details.**
- **The Un-machined specimen was sent by the customer.**

1. Chemical Test:

Test Equipment: ARL 3460 Spectrometer Arc/Spark OES.

ID(s)/Avg. of 2 Runs of each ID	Elements analyzed, %												
	C	Mn	Si	P	S	Ni	Cr	Cu	Mo	V	Ti	Al	B
2-18/303	4.423	0.166	2.530	0.042	0.009	0.009	0.022	0.011	0.000	0.013	0.044	0.009	0.001

Test conducted by: **Signature:**

Reviewed by: **Signature:**

- The test results represent a sample provided – by the customer - to the Lab only and do not represent the quantities of production or any other quantities belongs to the customer.
- Reports issued by the Lab are confidential and belong to the requesting party alone and cannot be given to any other party.
- The lab responsibility of delivering the rest of sample(s) to the customer expires after 15 days after the test report issuance date or due to the depletion of the sample(s) during test.

Principal Advisor	Lab Manager: Prof. Dr. Iman El Mahallawi
Prof. Dr. M. Raafat El-Koussy	Lab Supervisor: Prof.Dr. Waleed Khalifa
Signature:	Signature:

© Prof. Dr. Iman El Mahallawi 2015

2. Hardness Test:

Test Machine: Zwick/Roell ZHU250 Hardness Testing Machine.

Specimen code	Hardness, HV10			Average, HV10
	1	2	3	
2-18/303	212	215	211	213

Test conducted by: **Signature:**

Reviewed by: **Signature:**

- The results reported here are the responsibility of the lab, and represent the true results of the specimens provided by the customer. They do not represent any production quantities belonging to the customer.
- Reports issued by the Lab are confidential and belong to the requesting party alone and cannot be given to any other party.
- The lab responsibility of delivering the rest of sample(s) to the customer expires after 15 days after the test report issuance date or due to the depletion of the sample(s) during test.

Principal Advisor	Lab Manager: Prof. Dr. Iman El Mahallawi
Prof. Dr. M. Raafat El-Koussy	Lab Supervisor: Prof.Dr. Waleed Khalifa
Signature:	Signature:

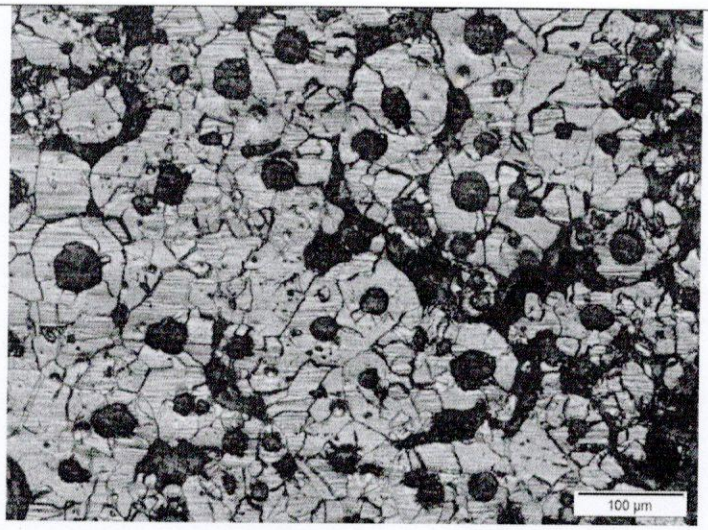
© Prof. Dr. Iman El Mahallawi 2015

MTL
Mechanical Testing Laboratory
Metallurgical Dept. – Building No. 32
Faculty of Engineering – Cairo University

معمل الاختبارات الميكانيكية
قسم الفلزات - مبنى رقم 32
كلية الهندسة – جامعة القاهرة

3-Microstructure test

Micro Graphic Etchant : Nitric Acid + Ethyl Alcohol



Test conducted by:

Signature:

Reviewed by:

Signature:

Principal Advisor	Lab Manager: Prof. Dr. Iman El Mahallawi
Prof. Dr. M. Raafat El-Koussy	Lab Supervisor: Prof.Dr. Waleed Khalifa
Signature:	Signature:

© Prof. Dr. Iman El Mahallawi 2015

MTL
Mechanical Testing Laboratory
Metallurgical Dept. – Building No. 32
Faculty of Engineering – Cairo University

معمل الاختبارات الميكانيكية
قسم الفلزات - مبنى رقم 32
كلية الهندسة – جامعة القاهرة

Test Report

Test Request #	779	Specimen(s) ID	2-18/304

Date of request	28/5/2018	**Number of pages**	3
Test(s) Required	Chemical + Hardness + Micro structure		
Test item description	Grooved cap 4" & 2.5"		
Owner	NAFFCO		
Date of Performing Test	20/6/2018	**Test Report Date**	25/6/2018
Temperature, °C	20	**Humidity, %**	39

- **Specimen details and conditions (shown above) are supplied by the customer; hence the lab bears no responsibility regarding these details.**
- **The Un-machined specimen was sent by the customer.**

1. Chemical Test:

Test Equipment: ARL 3460 Spectrometer Arc/Spark OES.

ID(s)/Avg. of 2 Runs of each ID	Elements analyzed, %												
	C	Mn	Si	P	S	Ni	Cr	Cu	Mo	V	Ti	Al	B
2-18/304	4.140	0.229	3.113	0.031	0.008	0.019	0.055	0.038	0.002	0.008	0.032	0.014	0.001

Test conducted by: **Signature:**

Reviewed by: **Signature:**

- The test results represent a sample provided – by the customer - to the Lab only and do not represent the quantities of production or any other quantities belongs to the customer.
- Reports issued by the Lab are confidential and belong to the requesting party alone and cannot be given to any other party.
- The lab responsibility of delivering the rest of sample(s) to the customer expires after 15 days after the test report issuance date or due to the depletion of the sample(s) during test.

Principal Advisor	Lab Manager: Prof. Dr. Iman El Mahallawi
Prof. Dr. M. Raafat El-Koussy	Lab Supervisor: Prof.Dr. Waleed Khalifa
Signature:	Signature:

© Prof. Dr. Iman El Mahallawi 2015

2. Hardness Test:

Test Machine: Zwick/Roell ZHU250 Hardness Testing Machine.

Specimen code	Hardness, HV10			Average, HV10
	1	2	3	
2-18/304	197	200	199	199

Test conducted by: **Signature:**

Reviewed by: **Signature:**

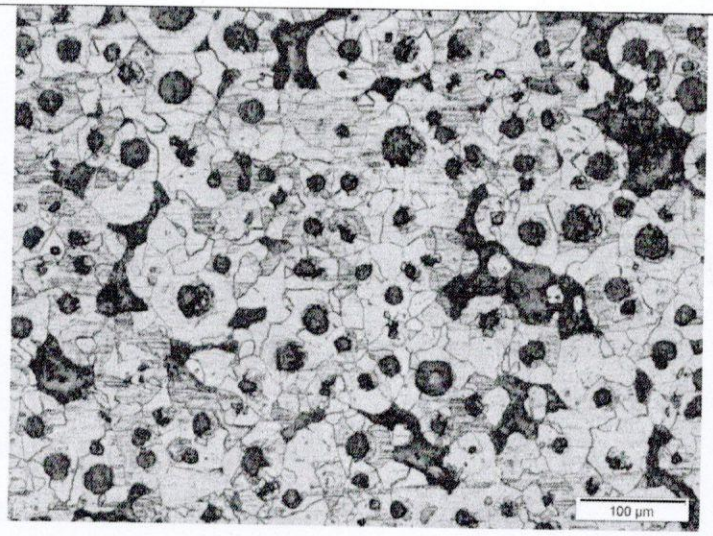
- The results reported here are the responsibility of the lab, and represent the true results of the specimens provided by the customer. They do not represent any production quantities belonging to the customer.
- Reports issued by the Lab are confidential and belong to the requesting party alone and cannot be given to any other party.
- The lab responsibility of delivering the rest of sample(s) to the customer expires after 15 days after the test report issuance date or due to the depletion of the sample(s) during test.

Principal Advisor	Lab Manager: Prof. Dr. Iman El Mahallawi
Prof. Dr. M. Raafat El-Koussy	Lab Supervisor: Prof.Dr. Waleed Khalifa
Signature:	Signature:

© Prof. Dr. Iman El Mahallawi 2015

3-Microstructure test

Micro Graphic Etchant : Nitric Acid + Ethyl Alcohol



Test conducted by:

Signature:

Reviewed by:

Signature:

Principal Advisor	Lab Manager: Prof. Dr. Iman El Mahallawi
Prof. Dr. M. Raafat El-Koussy	Lab Supervisor: Prof.Dr. Waleed Khalifa
Signature:	Signature:

© Prof. Dr. Iman El Mahallawi 2015

MTL
Mechanical Testing Laboratory
Metallurgical Dept. – Building No. 32
Faculty of Engineering – Cairo University

معمل الاختبارات الميكانيكية
قسم الفلزات - مبنى رقم 32
كلية الهندسة – جامعة القاهرة

Test Report

Test Request #	779	Specimen(s) ID	2-18/301

Date of request	28/5/2018	**Number of pages**	3
Test(s) Required	Chemical + Hardness + Microstructure		
Test item description	Grooved coupling 4"& 2.5"		
Owner	NAFFCO		
Date of Performing Test	20/6/2018	**Test Report Date**	25/6/2018
Temperature, °C	20	**Humidity, %**	39

- **Specimen details and conditions (shown above) are supplied by the customer; hence the lab bears no responsibility regarding these details.**
- **The Un-machined specimen was sent by the customer.**

1. Chemical Test:

Test Equipment: ARL 3460 Spectrometer Arc/Spark OES.

ID(s)/Avg. of 2 Runs of each ID	Elements analyzed, %												
	C	Mn	Si	P	S	Ni	Cr	Cu	Mo	V	Ti	Al	B
2-18/301	3.261	0.249	3.007	0.029	0.009	0.022	0.061	0.045	0.003	0.007	0.022	0.017	0.001

Test conducted by: **Signature:**

Reviewed by: **Signature:** M. Hafez

- The test results represent a sample provided – by the customer - to the Lab only and do not represent the quantities of production or any other quantities belongs to the customer.
- Reports issued by the Lab are confidential and belong to the requesting party alone and cannot be given to any other party.
- The lab responsibility of delivering the rest of sample(s) to the customer expires after 15 days after the test report issuance date or due to the depletion of the sample(s) during test.

Principal Advisor	Lab Manager: Prof. Dr. Iman El Mahallawi
Prof. Dr. M. Raafat El-Koussy	Lab Supervisor: Prof.Dr. Waleed Khalifa
Signature:	Signature:

© Prof. Dr. Iman El Mahallawi 2015

2. Hardness Test:

Test Machine: Zwick/Roell ZHU250 Hardness Testing Machine.

Specimen code	Hardness, HV10			Average, HV10
	1	2	3	
2-18/301	186	192	188	189

Test conducted by: **Signature:**

Reviewed by: **Signature:**

- The results reported here are the responsibility of the lab, and represent the true results of the specimens provided by the customer. They do not represent any production quantities belonging to the customer.
- Reports issued by the Lab are confidential and belong to the requesting party alone and cannot be given to any other party.
- The lab responsibility of delivering the rest of sample(s) to the customer expires after 15 days after the test report issuance date or due to the depletion of the sample(s) during test.

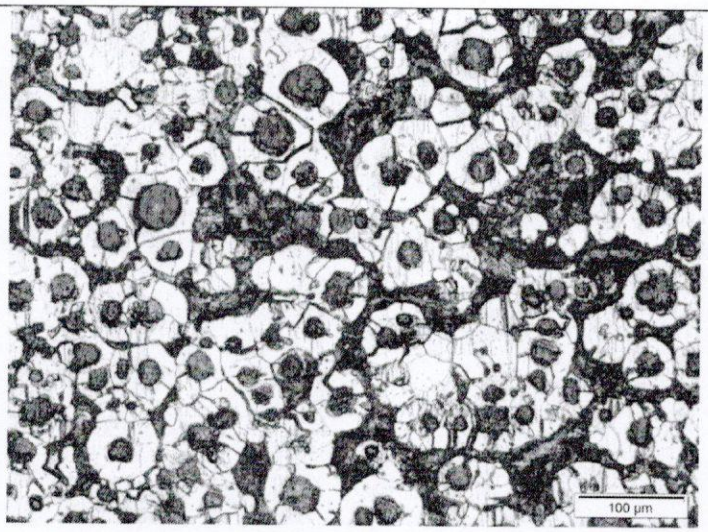
Principal Advisor	Lab Manager: Prof. Dr. Iman El Mahallawi
Prof. Dr. M. Raafat El-Koussy	Lab Supervisor: Prof.Dr. Waleed Khalifa
Signature:	Signature:

MTL
Mechanical Testing Laboratory
Metallurgical Dept. – Building No. 32
Faculty of Engineering – Cairo University

معمل الاختبارات الميكانيكية
قسم الفلزات - مبنى رقم 32
كلية الهندسة – جامعة القاهرة

3- Microstructure test

Micro Graphic Etchant : Nitric Acid + Ethyl Alcohol



Test conducted by:

Signature:

Reviewed by:

Signature:

Principal Advisor	Lab Manager: Prof. Dr. Iman El Mahallawi
Prof. Dr. M. Raafat El-Koussy	Lab Supervisor: Prof.Dr. Waleed Khalifa
Signature:	Signature:

© Prof. Dr. Iman El Mahallawi 2015

MTL
Mechanical Testing Laboratory
Metallurgical Dept. – Building No. 32
Faculty of Engineering – Cairo University

معمل الاختبارات الميكانيكية
قسم الفلزات - مبنى رقم 32
كلية الهندسة – جامعة القاهرة

Test Report

Test Request #	779	Specimen(s) ID	2-18/302

Date of request	28/5/2018	**Number of pages**	3
Test(s) Required	Chemical + Hardness + Micro structure		
Test item description	Grooved Tee 4"		
Owner	NAFFCO		
Date of Performing Test	20/6/2018	**Test Report Date**	25/6/2018
Temperature, °C	20	**Humidity, %**	39

- **Specimen details and conditions (shown above) are supplied by the customer; hence the lab bears no responsibility regarding these details.**
- **The Un-machined specimen was sent by the customer.**

1. Chemical Test:

Test Equipment: ARL 3460 Spectrometer Arc/Spark OES.

ID(s)/Avg. of 2 Runs of each ID	Elements analyzed, %												
	C	Mn	Si	P	S	Ni	Cr	Cu	Mo	V	Ti	Al	B
2-18/302	3.734	0.273	2.650	0.026	0.007	0.012	0.030	0.019	0.003	0.006	0.023	0.012	0.001

Test conducted by: **Signature:**

Reviewed by: **Signature:**

- The test results represent a sample provided – by the customer - to the Lab only and do not represent the quantities of production or any other quantities belongs to the customer.
- Reports issued by the Lab are confidential and belong to the requesting party alone and cannot be given to any other party.
- The lab responsibility of delivering the rest of sample(s) to the customer expires after 15 days after the test report issuance date or due to the depletion of the sample(s) during test.

Principal Advisor	Lab Manager: Prof. Dr. Iman El Mahallawi
Prof. Dr. M. Raafat El-Koussy	Lab Supervisor: Prof.Dr. Waleed Khalifa
Signature:	Signature:

© Prof. Dr. Iman El Mahallawi 2015

2-Hardness Test:

Test Machine: Zwick/Roell ZHU250 Hardness Testing Machine.

Specimen code	Hardness, HV10			Average, HV10
	1	2	3	
2-18/302	195	191	197	194

Test conducted by: **Signature:**

Reviewed by: **Signature:**

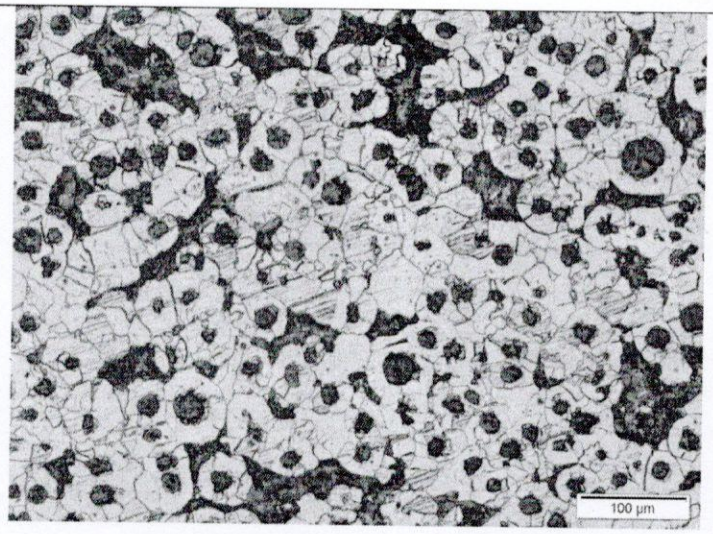
- The results reported here are the responsibility of the lab, and represent the true results of the specimens provided by the customer. They do not represent any production quantities belonging to the customer.
- Reports issued by the Lab are confidential and belong to the requesting party alone and cannot be given to any other party.
- The lab responsibility of delivering the rest of sample(s) to the customer expires after 15 days after the test report issuance date or due to the depletion of the sample(s) during test.

Principal Advisor	Lab Manager: Prof. Dr. Iman El Mahallawi
Prof. Dr. M. Raafat El-Koussy	Lab Supervisor: Prof.Dr. Waleed Khalifa
Signature:	Signature:

© Prof. Dr. Iman El Mahallawi 2015

3-Microstructure test

Micro Graphic Etchant : Nitric Acid + Ethyl Alcohol



Test conducted by:

Signature:

Reviewed by:

Signature:

Principal Advisor	Lab Manager: Prof. Dr. Iman El Mahallawi
Prof. Dr. M. Raafat El-Koussy	Lab Supervisor: Prof.Dr. Waleed Khalifa
Signature:	Signature:

Mining Studies & Research Center (MSRC)
Faculty of Engineering - Cairo University

مركز الدراسات والبحوث التعدينية
كلية الهندسة - جامعة القاهرة

السادة/ شركة نافكو مصر

تحية طيبة وبعد

بالإشارة إلى خطابكم المؤرخ في ٢٠١٤/٩/٨ بشأن طلبكم لنا عمل إختبار ضغط هيدروليكي علي عينتين مواسير سيميليس جدول ٤٠ غير ملحومة طولياً واللتين تم توريدهم إلينا بمعرفتكم من ضمن المواسير الخاصة بمشروع جبل عمر بمكة المكرمة وكانت أبعادها كالآتي:

	العينة الأولى	العينة الثانية
القطر الداخلي **السمك** **الطول**	١ بوصة حوالي ٣ مم حوالي ٥٢ سم	١ بوصة حوالي ٣ مم حوالي ٥١ سم
الرقم الكودي عند إجراء الإختبار	(١٠٢)	(١٠٣)

نفيد سيادتكم علماً بانه عند إجراء إختبار الضغط الهيدروليكي المطلوب على العينتين المذكورتين وجدنا أن كلا العينتان قد تحملت ظروف إجراء هذا الإختبار عند ضغط ١٦ بار ولمدة تجاوزت الساعتين لكل منهما، وتم حفر رقم كودي على كل عينة بمعرفة المعمل طرفنا وكان الرقم الكودي للعينة الأولى (١٠٢) والرقم الكودي للعينة الثانية (١٠٣) وبالتالي تكون هاتان العينتان الموردتان بمعرفتكم ضمن الأعمال الخاصة بمشروع جبل عمر بمكة المكرمة قد إجتازت الإختبار المطلوب بنجاح.

وتفضلوا بقبول وافر التحية والإحترام

مع خالص تحياتي

مدير المركز

ا.د/ خالد أحمد عبد الفتاح

تحريراً في ٢٠١٤/٩/١١

كلية الهندسة - جامعة القاهرة - مبنى رقم ٣٢ (قسم التعدين) - الدور الرابع - ١٢٦١٣ جيزة ت/فاكس ٣٧٧٤٦٠٢٦ - ٣٥٦٧٨١٧٢
Mining, Petroleum, and Metallurgical Engineering Department, Faculty of Engineering
Cairo University, Giza 12613, Egypt. Fax: (202) 37746026 Tel: (202) 35678172

1. EXPORTER(NAME,ADDRESS,COUNTRY) المصدر(اسم، عنوان، بلد)
TECHNO PRO MIDDLE EAST FZCO
PO BOX: 261044
JEBEL ALI FREE ZONE, DUBAI
TEL:50-4508135
UNITED ARAB EMIRATES

2. CONSIGNEE(NAME,ADDRESS,COUNTRY) المرسل اليه(اسم، عنوان، بلد)
NAFFCO ELECTROMECHANICAL
PO BOX: 4192
ABU DHABI
TEL:026904555 FAX:026904666
UNITED ARAB EMIRATES

UNITED ARAB EMIRATES دولة الإمارات العربية المتحدة

غـرفـة دبـي
DUBAI CHAMBER

Certificate of Origin شـهـادة المـنـشـأ

Certificate No. 17599748 Date 14-FEB-2018

ORIGINAL

3. Means of Transport: Vessel's Name/Flight No. وسيلة النقل
: By Land

6. Country of Final Destination بـلـد الوجهـة الأخـيرة
United Arab Emirates

4. Estimated Date of Departure التـاريـخ المتوقـع للمـغادرة

7. Invoice No. and Date رقم و تاريخ الفاتورة
1008-2018-03, 06-FEB-2018

5. Port of Discharge ميناء / مكان التفريغ

8. Country of Origin of Goods بلد منشأ البضاعة
United Kingdom

9. العلامات والأرقام Marks & Numbers	10. عدد ونوع التعبئة، وصف البضاعة (أسماء الماركات إذا لزم الأمر) No. and Kind of Packages,Description of Goods (Include Brand Names if Necessary)	11. الكمية و الوحدة Quantity & Unit
1 73071100	Tube & pipe fittings (for example, couplings, elbows or sleeves) of non-malleable cast iron.	

Grooved and Threaded Fittings Shield

As per the attached invoice
End of Description

غـرفـة دبـي
DUBAI CHAMBER

12. CERTIFICATION BY THE COMPETENT AUTHORITY

We hereby certify that evidence has been produced to satisfy us that the goods specified above originate in / were processed in the country shown in box 8. This Certificate is, therefore; issued and certified to the best of our knowledge and belief to be correct and without any liability on our part.

Authorized Signatory المـخول بـالـتوقـيـع

Once this Certificate is issued, it shall be invalid should any alteration be made to this Certificate, without the competent Authority's authorization.

تصديق جهة الإصدار

نشهد بأنه قد تم تقديم الأدلة بأن البضاعة المذكورة أعلاه منشؤها / تصنيعها في البلد الموضح في الخانة 8. ولذلك فإن هذه الشهادة قد تم إصدارها والتصديق عليها حسب معرفتنا واعتقادنا بصحتها دون أية مسؤولية علينا.

بمجرد إصدار هذه الشهادة فإن أي تغيير فيها دون إذن من جهة الإصدار يجعلها لاغية.

للتأكد من صحة الشهادة يرجى زيارة أحد المواقع التالية
For online verification of this certificate,please visit.
http://www.dubaichamber.com/verify
Verify ID.-213260882JPM
https://certificates.iccwbo.org/

غـرفـة تجـارة وصـنـاعـة دبـي
Dubai Chamber of Commerce & Industry
P.O.Box 1457 – Dubai, U.A.E. صندوق بريد | Tel (Within UAE) 800 CHAMBER (800 2426237) | Tel (Outside UAE) (+971) 4 2280000 هاتف
Fax (+971) 4 2028888 فاكس | Email: customercare@dubaichamber.ae البريد الإلكتروني | Website: www.dubaichamber.ae الموقع الإلكتروني
Service Request No - 1-5544092318 User Name - TECHNO_PRO Branch Name - 2