

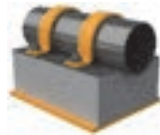



Insulation Equipment Index

Description	Figure	Page
Insulating Wood Block – Type A	101A	169
Insulating Wood Block – Type B	101B	169
U-Bolt C/W Insulating Wood Block	114	169
Insulated Hanging Support	400	161
Insulated All in One Clamped Support	410	162
150mm QplaS Cold Line Support	420	163
300mm QplaS Cold Line Support	430	164
300mm QplaS Cold Line Stop Support	440	165
300mm QplaS Vertical Cold Line Stop Support	450	166
QplaS Cold Line Base Support	460	167
QplaS Cold Line Clamped Shoe	470	168



Insulation Equipment – Pictorial Index

Fig.	Page	Description	Pictorial
101A	169	Insulating Wood Block Type A	
101B	169	Insulating Wood Block Type B	
114	169	U-Bolt c/w Insulating Wood Block	
400	161	Insulated Hanging Support	
410	162	Insulated All in One Clamped Support	
420	163	150mm QplaS Cold Line Support	

Fig.	Page	Description	Pictorial
430	164	300mm QplaS Cold Line Support	
440	165	300mm QplaS Cold Line Stop Support	
450	166	300mm QplaS Vertical Cold Line Stop Support	
460	167	QplaS Cold Line Base Support	
470	168	QplaS Cold Line Clamped Shoe	

Insulation Equipment

In addition to QPS's QPLAS material we also supply a large range of insulating pipe supports to suit a large range of temperatures, from cryogenic pipe work to high temperature pipes and vessels. We supply a number of different insulating materials to suit our client's individual, insulating needs.

Cellular Glass

A highly efficient impermeable insulation material. It is totally inert and non combustible and is suited to severe cryogenic temperature cycles.

Low Density & High Density Polyurethane Foam

This is CFC free foam with good load carrying capabilities and a large temperature range, used in oil and petrochemical industries where a high efficiency of insulation is required. The material also has excellent fire retardant properties.

Low Density & High Density Calcium Silicate

This is a tough and hard wearing insulation, which has an excellent thermal efficiency on hot process applications. The material is inert and non-combustible and contains no asbestos.

QPIaS

A high strength glass reinforced composite, which has a wide temperature range and can be machined, bored and tapped. It has excellent fire safety properties and is resistant to UV and chemical corrosion.

Phenolic

This is a CFC free high density foam with a large temperature range is, fire resistant and has an extremely low smoke emission. It is also treated with a dust suppressant, which makes it suitable for pharmaceutical, food processing, medical and other clean air environments.

Material Specifications				
Material	Density	Comp Strength	Thermal Conductivity	Temp Range
Cellular Glass	165 kg/m ³	1.6 Mpa	0.047 (W/m K) @ +10°C	-260°C to +430°C
Low Density Polyurethane	50 kg/m ³	0.26 Mpa	0.027 (W/m K) @ -160°C	-120°C to +140°C
High Density Polyurethane	400 kg/m ³	7 Mpa	0.028 (W/m K) @ -160°C	-200°C to +80°C
Low Density Calcium Silicate	260 kg/m ³	1.5 Mpa	0.058 (W/m K) @ +200°C	0°C to +1000°C
High Density Calcium Silicate	770 kg/m ³	11 Mpa	0.18 (W/m K) @ +200°C	0°C to +500°C
QPLAS	1850 kg/m ³	140 Mpa	0.35 (W/m K) @ +20°C	-190°C to +160°C
Phenolic	60 to 160 kg/m ³	0.4 to 2.3 Mpa	0.028 to 0.036 (W/m K) @ +10°C	-180°C to +120°C



QPIaS - Insulation Equipment

QPS Description

The insulation we use in the blocks and pipe shoes is moulded from a high strength glass reinforced composite and is referred to as QPIaS.

The QPIaS material has a number of advantages over other materials such as steel and wood, in that no maintenance is required after installation, as it requires no painting or special coatings. The QPIaS material absorbs no moisture and suffers no corrosive effects. The versatility of this material means that it can be machined, bored and tapped so that it can incorporate steel supports and fixings. QPIaS is also extremely safe as it has excellent fire safety properties tested to BS 476 Parts 5&6 (1968) and is classified as 'Not Easily Ignitable'.

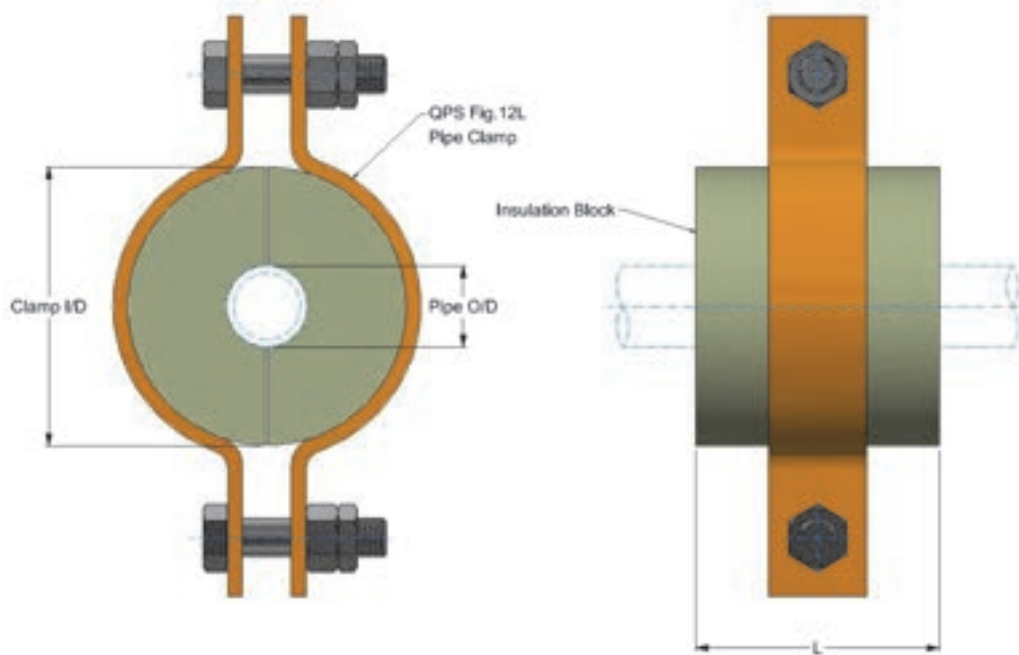
Material Benefits

- Worldwide installations (in diverse climates, conditions & applications).
- High strength in all directions.
- Robust and durable.
- Thermal and electrical insulator.
- Dimensionally stable.
- Fire retardant.
- Flame resistant.
- Corrosion free.
- Resistant to UV and chemical attack.
- Non-hazardous.
- Wide temperature range.
- Maintenance free.
- No significant moisture absorption.
- No protective coating required.
- Product life expectancy in excess of 30 years.

Material Properties and Technical Information

Compressive Strength 20°C (Mpa)	140
Compressive Strength 1000°C (Mpa)	50
Compressive Strength 150°C (Mpa)	30
Tensile Strength 20°C	45
Shear Strength 20°C	50
Flexural Strength 20°C	90
Density (g/cm ³)	1.85
Elastic Modulus (GPa)	14
Thermal Conductivity (W/m K) @ 20°C	0.35
Impact Strength 20°C	25
Electrical Strength MV/m	9.5
Volume Resistivity TWm	1.5
Surface Resistivity TW	1000
Upper Operating Temperature (°C)	160
Lower Operating Temperature (°C)	-190

Insulation Equipment – Fig. 400



NPS	Pipe O/D	L	Cellular Glass	LD Polyurethane	HD Polyurethane	LD Calcium Silicate	HD Calcium Silicate	Phenolic
			Max Load Kg	Max Load Kg	Max Load Kg	Max Load Kg	Max Load Kg	Max Load Kg
15	21.3	100	73	12	222	68	222	12 to 75
20	26.9	100	92	15	222	86	222	16 to 95
25	33.7	100	115	19	222	108	222	19 to 119
32	42.4	100	145	24	222	136	222	24 to 149
40	48.3	100	165	27	365	155	365	28 to 170
50	60.3	100	206	33	365	193	365	35 to 213
65	76.1	100	260	42	365	244	365	44 to 268
80	88.9	100	304	49	365	285	365	51 to 313
100	114.3	100	365	63	365	365	365	66 to 365
125	136.7	100	365	76	365	365	365	79 to 365
150	168.3	125	735	117	735	674	735	121 to 735
200	219.1	125	735	152	735	735	735	158 to 735
250	273	125	1095	190	1095	1095	1095	197 to 1095
300	323.9	200	1095	360	1095	1095	1095	374 to 1095
350	355.6	200	1095	395	1095	1095	1095	410 to 1095
400	406.4	200	1095	451	1095	1095	1095	469 to 1095
450	457	200	1450	508	1450	1450	1450	527 to 1450



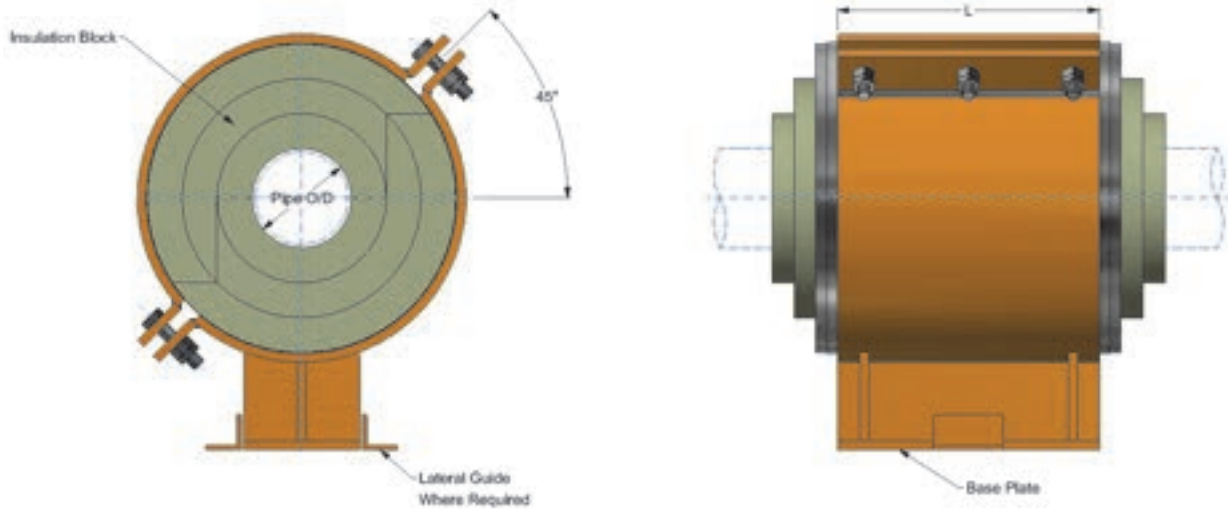
Fig. 400
Material: Carbon Steel + Insulation

Galvanised Steel wrapper plate supplied with the insulation.

Please Specify:-

- Figure Number:
- NPS:
- Insulation Thickness:
- Insulation Type:

Insulation Equipment – Fig. 410



NPS	Pipe O/D	L	Cellular Glass	LD Polyurethane	HD Polyurethane	LD Calcium Silicate	HD Calcium Silicate	Phenolic
			Max Load Kg	Max Load Kg	Max Load Kg	Max Load Kg	Max Load Kg	Max Load Kg
15	21.3	200	146	24	637	136	1001	25 to 150
20	26.9	200	184	30	804	172	1264	31 to 184
25	33.7	200	230	37	1008	216	1584	39 to 230
32	42.4	200	290	47	1268	272	1992	49 to 290
40	48.3	200	330	54	1444	309	2270	56 to 330
50	60.3	200	412	67	1803	386	2833	70 to 412
65	76.1	200	520	85	2276	488	3576	88 to 520
80	88.9	300	911	148	3700	854	3700	154 to 911
100	114.3	300	1172	190	3900	1099	3900	198 to 1172
125	136.7	300	1401	228	6150	1314	6150	236 to 1401
150	168.3	300	1725	280	7549	1618	7549	291 to 1725
200	219.1	300	2246	365	8400	2106	8400	379 to 2246
250	273	400	3732	606	13500	3499	13500	630 to 3732
300	323.9	400	4428	719	13500	4151	13500	747 to 4428
350	355.6	400	4861	790	15500	4557	15500	820 to 4861
400	406.4	400	5555	903	16500	5208	16500	937 to 5555
450	457	400	6247	1015	18000	5857	18000	1054 to 6247



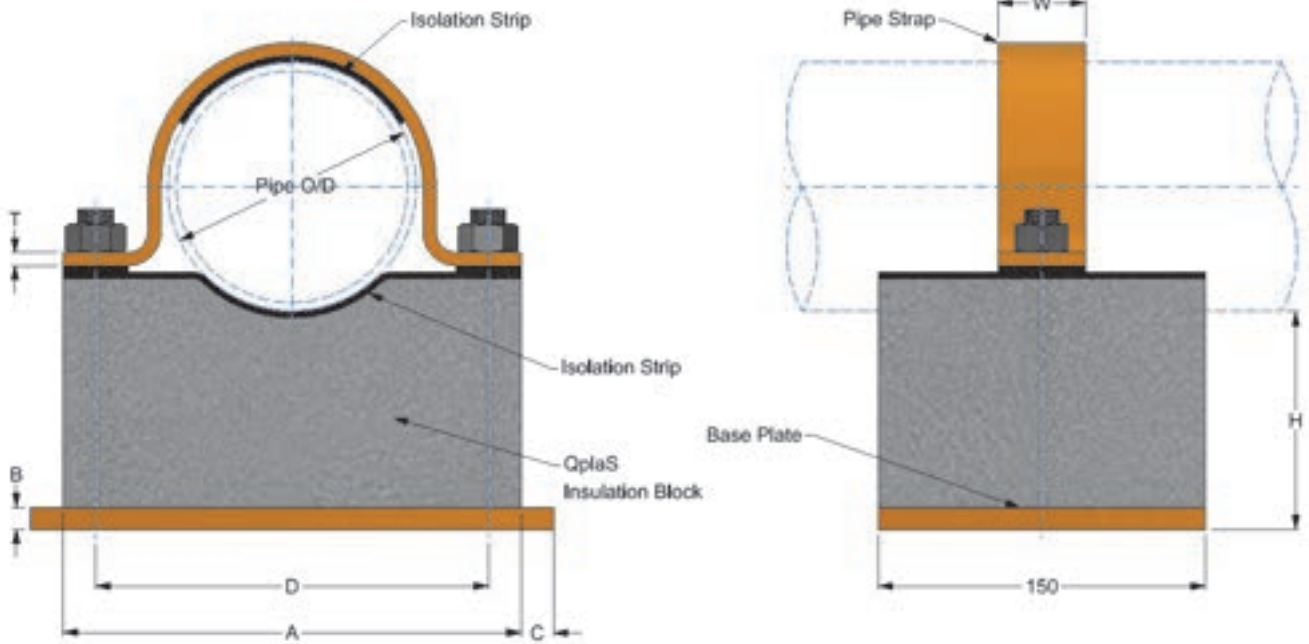
Fig. 410
Material: Carbon Steel + Insulation

Galvanised Steel wrapper plate supplied with the insulation.

Please Specify:-

- Figure Number:
- NPS:
- Height:
- Insulation – No. of Layers:
- Insulation Thickness:
- Insulation Type:

Insulation Equipment – Fig. 420



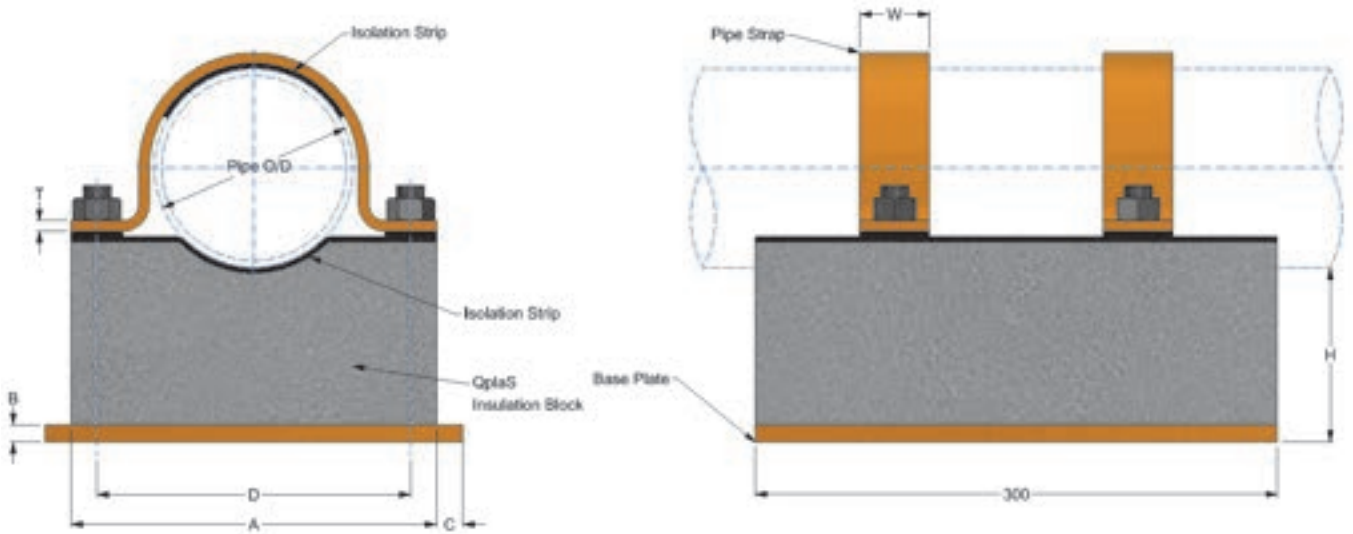
NPS	Pipe O/D	Stud Ø	A	B	C	D	WxT	Max Load kg	
								Vertical	Lateral
25	33.7	M6	100	10	5	70	40x3	306	306
32	42.4	M10	100	10	5	80	40x3	358	358
40	48.3	M10	120	10	5	90	40x3	408	408
50	60.3	M10	150	10	5	120	40x6	510	510
65	76.1	M12	150	10	5	130	40x6	610	610
80	88.9	M12	170	10	5	140	40x6	714	714
90	101.6	M12	190	10	5	150	40x6	760	760
100	114.3	M16	210	10	5	170	40x6	815	815
125	136.7	M16	250	10	5	200	50x6	1000	900
150	168.3	M16	290	12	5	240	50x6	1223	1019
200	219.1	M16	340	12	5	290	50x8	1630	1121
250	273	M20	400	12	5	350	60x8	2038	1223
300	323.9	M20	460	12	5	400	60x8	3057	1427
350	355.6	M20	500	12	5	440	60x8	3566	1529
400	406.4	M20	550	15	5	490	60x8	4281	1630
450	457	M20	600	15	5	540	60x8	5097	2038
500	508	M20	650	15	5	590	60x8	6116	2446
600	609	M20	760	15	5	700	60x8	7645	2955
700	711.2	M22	870	15	5	800	60x8	8665	3057
750	762	M24	950	15	5	860	60x8	10194	3262

Fig. 420
 Materials:-
 Base Plate: Carbon Steel
 Clamp: Carbon Steel
 Insulation: QPlaS
 Isolation Strips: Neoprene

- Please Specify:-**
- Figure Number:
 - NPS:
 - Height (H):



Insulation Equipment – Fig. 430

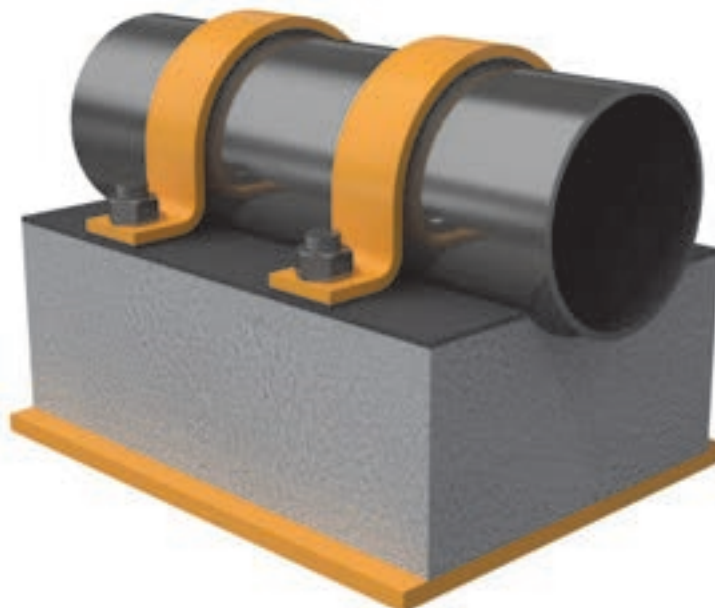


NPS	Pipe O/D	Stud Ø	A	B	C	D	WxT	Max Load kg	
								Vertical	Lateral
25	33.7	M6	100	10	5	70	40x3	510	510
32	42.4	M10	100	10	5	80	40x3	620	550
40	48.3	M10	120	10	5	90	40x3	714	611
50	60.3	M10	150	10	5	120	40x6	917	815
65	76.1	M12	150	10	5	130	40x6	1000	950
80	88.9	M12	170	10	5	140	40x6	1223	1121
90	101.6	M12	190	10	5	150	40x6	1350	1230
100	114.3	M16	210	10	5	170	40x6	1427	1325
125	136.7	M16	250	10	5	200	50x6	1730	1532
150	168.3	M16	290	12	5	240	50x6	2038	1732
200	219.1	M16	340	12	5	290	50x8	2751	1834
250	273	M20	400	12	5	350	60x8	3466	2038
300	323.9	M20	460	12	5	400	60x8	5097	2446
350	355.6	M20	500	12	5	440	60x8	6014	2548
400	406.4	M20	550	15	5	490	60x8	7238	2751
450	457	M20	600	15	5	540	60x8	8665	3466
500	508	M20	650	15	5	590	60x8	10703	4076
600	609	M20	760	15	5	700	60x8	12946	5097
700	711.2	M22	870	15	5	800	60x8	14985	5505
750	762	M24	950	15	5	860	60x8	18043	6014

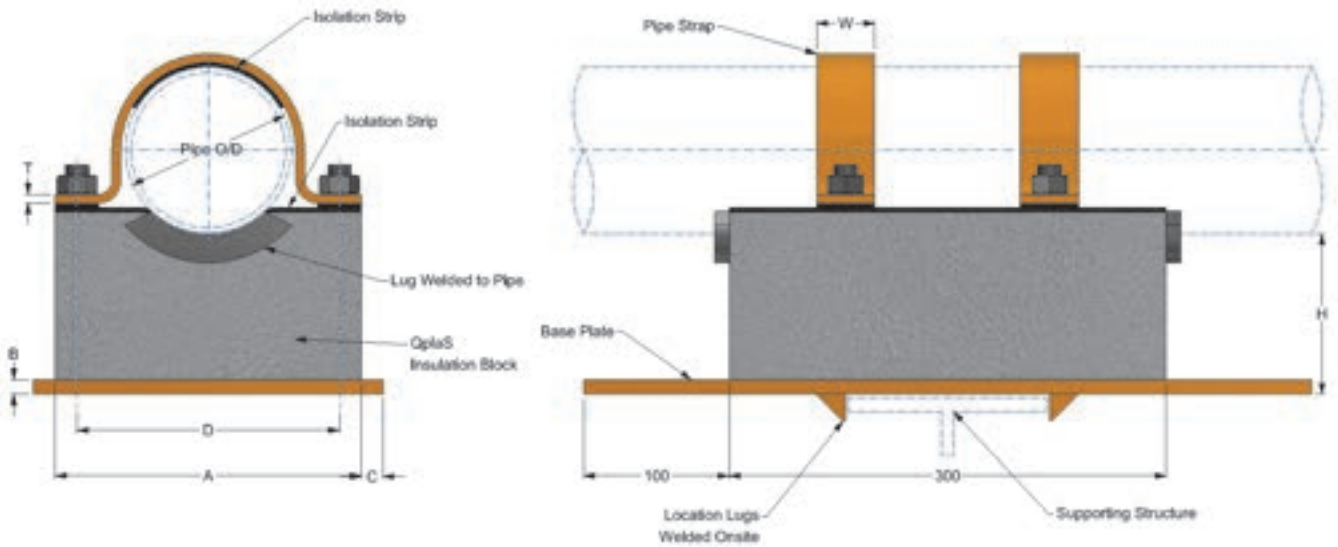
Fig. 430
Materials:-
 Base Plate: Carbon Steel
 Clamps: Stainless Steel
 Insulation: QPlaS
 Isolation Strips: Neoprene

Please Specify:-

- Figure Number:
- NPS:
- Height (H):



Insulation Equipment – Fig. 440

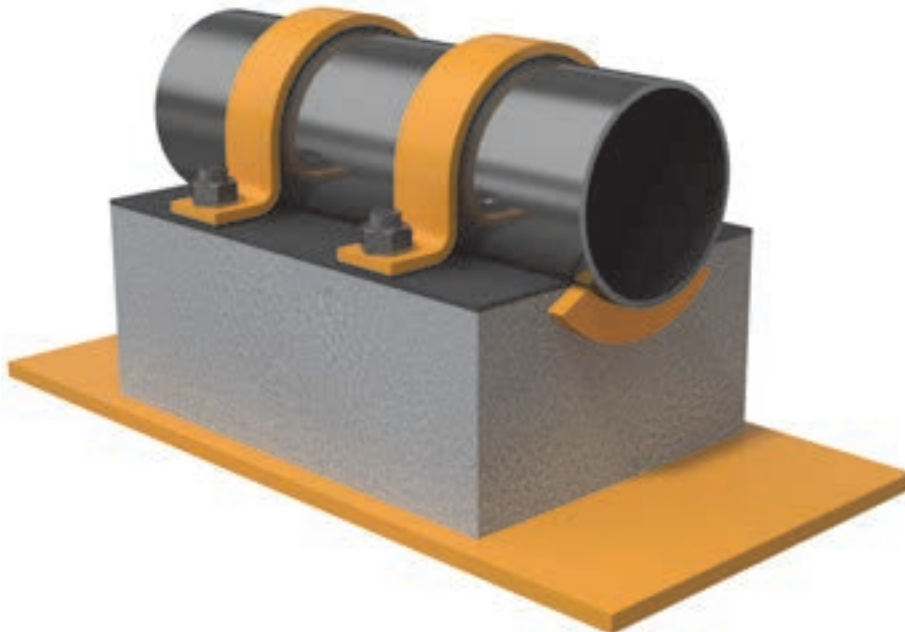


NPS	Pipe O/D	Stud Ø	A	B	C	D	WxT	Max Load kg	
								Vertical	Lateral
25	33.7	M6	100	10	5	70	40x3	510	510
32	42.4	M10	100	10	5	80	40x3	620	550
40	48.3	M10	120	10	5	90	40x3	714	611
50	60.3	M10	150	10	5	120	40x6	917	815
65	76.1	M12	150	10	5	130	40x6	1000	950
80	88.9	M12	170	10	5	140	40x6	1223	1121
90	101.6	M12	190	10	5	150	40x6	1350	1230
100	114.3	M16	210	10	5	170	40x6	1427	1325
125	136.7	M16	250	10	5	200	50x6	1730	1532
150	168.3	M16	290	12	5	240	50x6	2038	1732
200	219.1	M16	340	12	5	290	50x8	2751	1834
250	273	M20	400	12	5	350	60x8	3466	2038
300	323.9	M20	460	12	5	400	60x8	5097	2446
350	355.6	M20	500	12	5	440	60x8	6014	2548
400	406.4	M20	550	15	5	490	60x8	7238	2751
450	457	M20	600	15	5	540	60x8	8665	3466
500	508	M20	650	15	5	590	60x8	10703	4076
600	609	M20	760	15	5	700	60x8	12946	5097
700	711.2	M22	870	15	5	800	60x8	14985	5505
750	762	M24	950	15	5	860	60x8	18043	6014

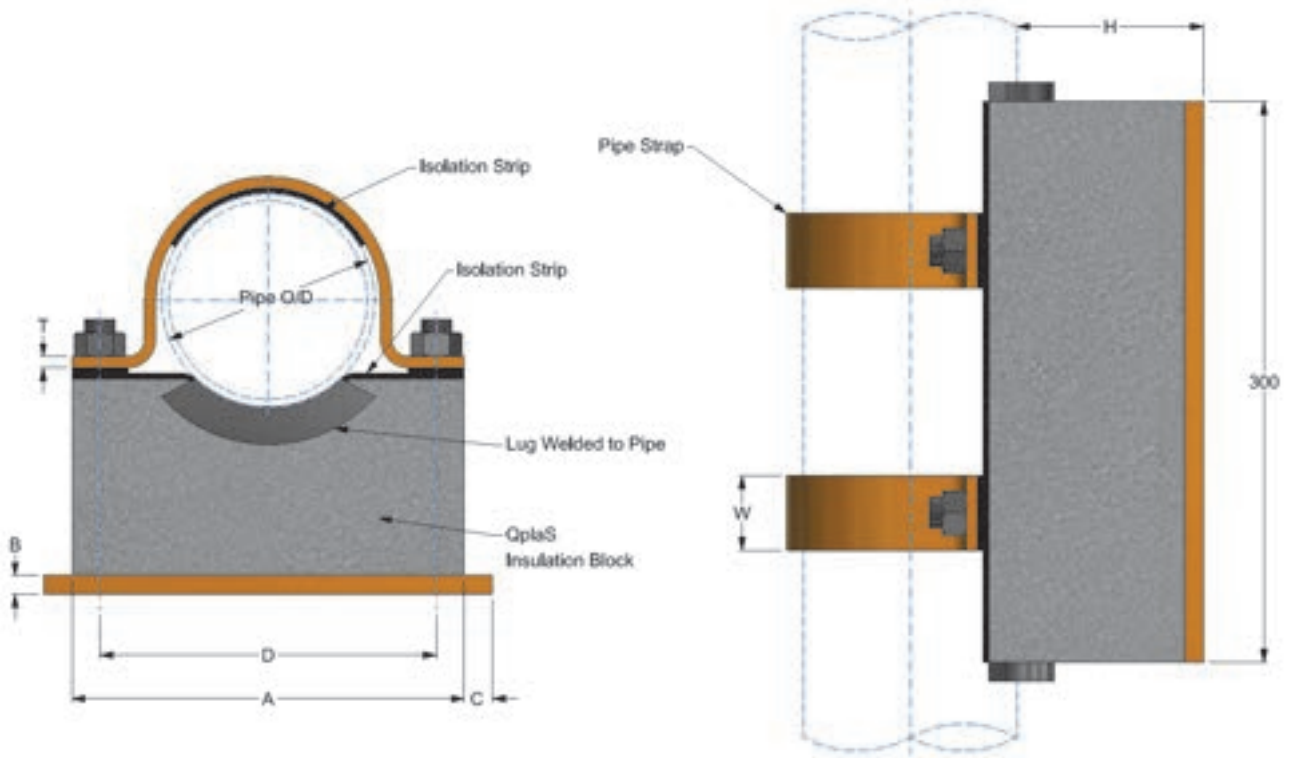
Fig. 440
 Materials:-
 Base Plate: Carbon Steel
 Clamps: Stainless Steel
 Insulation: QPlaS
 Isolation Strips: Neoprene

Please Specify:-

- Figure Number:
- NPS:
- Height (H):



Insulation Equipment – Fig. 450

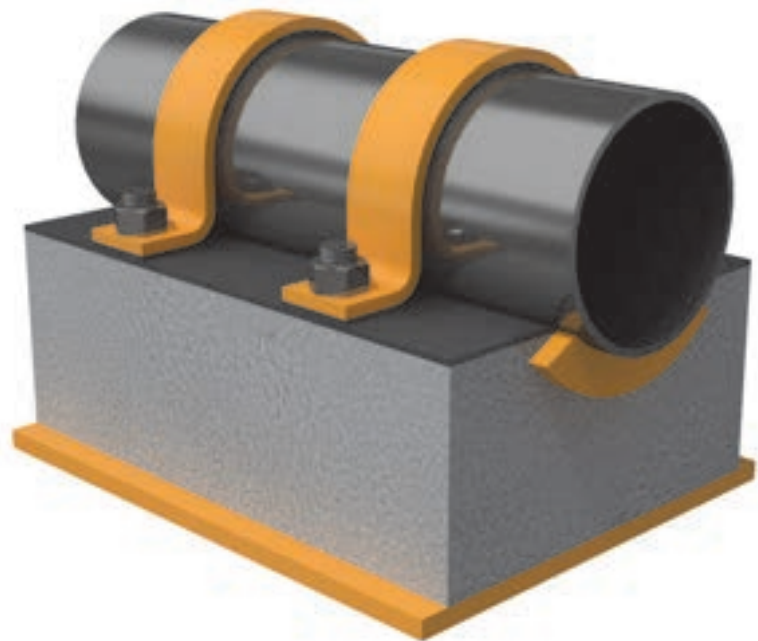


NPS	Pipe O/D	Stud Ø	A	B	C	D	WxT	Max Load kg		
								Dir X	Dir Y	Dir Z
25	33.7	M6	100	10	5	70	40x3	306	306	306
32	42.4	M10	100	10	5	80	40x3	356	356	356
40	48.3	M10	120	10	5	90	40x3	408	408	408
50	60.3	M10	150	10	5	120	40x6	510	510	510
65	76.1	M10	150	10	5	130	40x6	620	620	620
80	88.9	M12	170	10	5	140	40x6	714	714	714
90	101.6	M12	190	10	5	150	40x6	774	774	774
100	114.3	M16	210	10	5	170	40x6	815	815	815

Fig. 450
Materials:-
 Base Plate: Carbon Steel
 Clamps: Stainless Steel
 Insulation: QPlaS
 Isolation Strips: Neoprene

Please Specify:-

- Figure Number:
- NPS:
- Height (H):



Insulation Equipment – Fig. 460

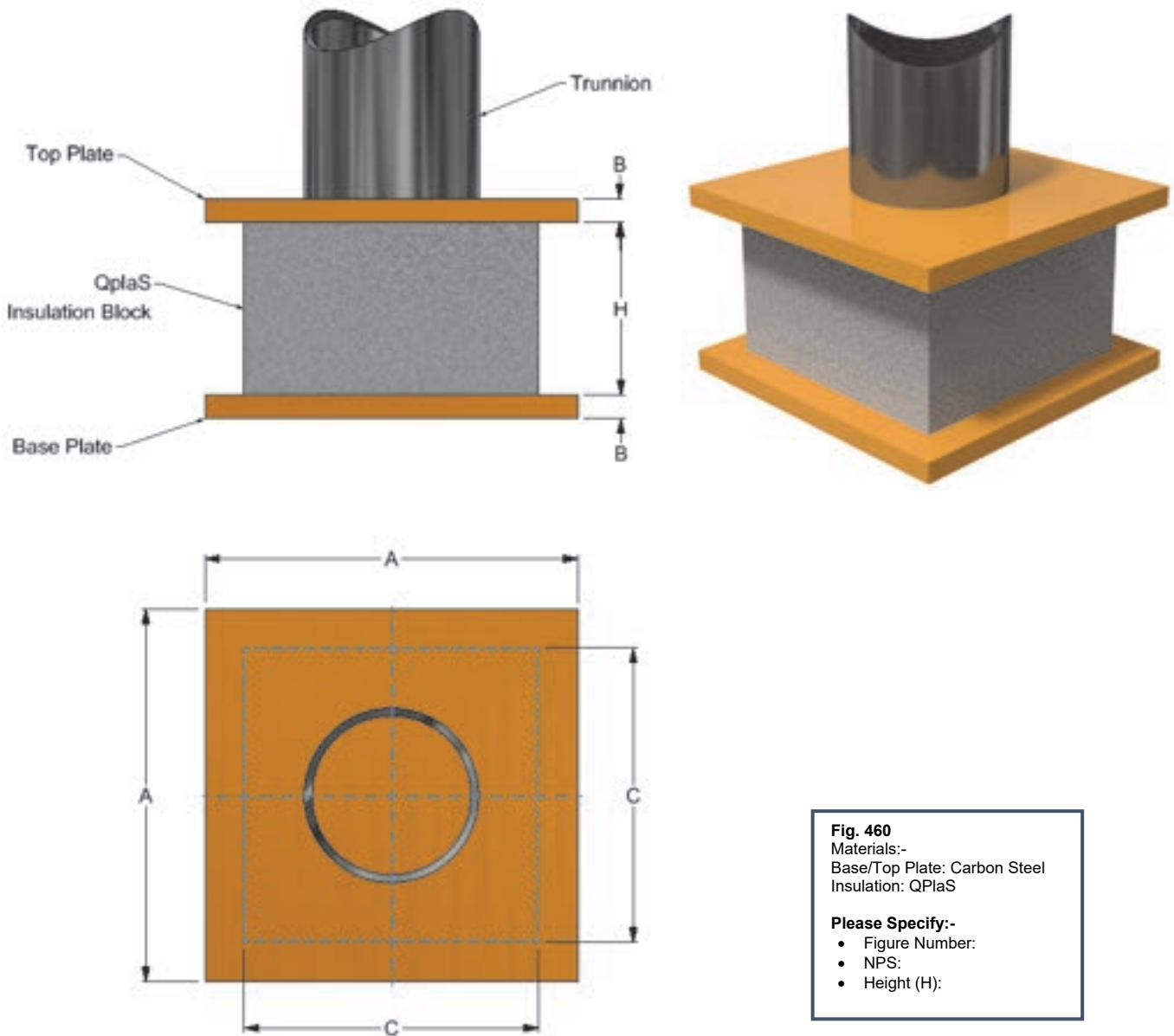
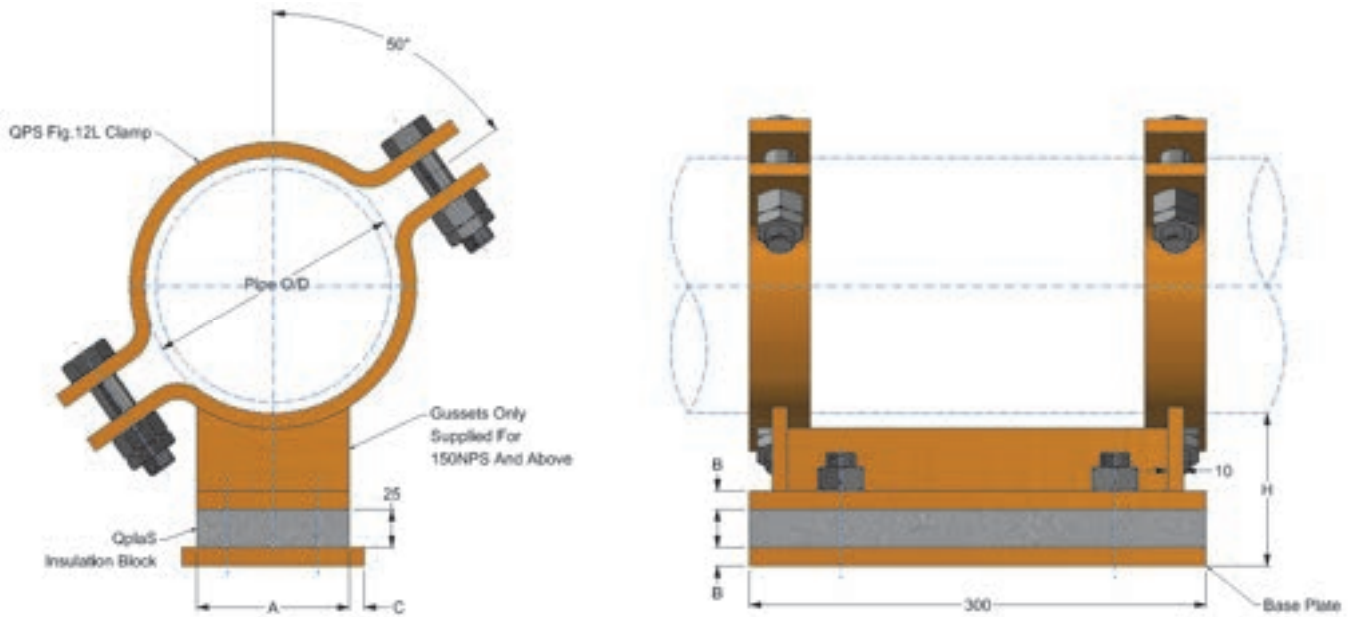


Fig. 460
Materials:-
 Base/Top Plate: Carbon Steel
 Insulation: QPlaS
Please Specify:-

- Figure Number:
- NPS:
- Height (H):

NPS	Pipe O/D	Trunnion Size	Plate Dimensions AxAxB	Block Dimensions CxCxH	Plate Fixings (Per Plate)		Max Load Kg	
					Number	Size	Vertical	Lateral
25	33.7	20	140x140x10	100x100x90	4	M8x30	1529	510
32	42.4	25	140x140x10	100x100x90	4	M8x30	1529	510
40	48.3	32	140x140x10	100x100x90	4	M8x30	1529	510
50	60.3	40	140x140x10	100x100x90	4	M8x30	1529	510
65	76.1	40	140x140x10	100x100x90	4	M8x30	1529	510
80	88.9	50	140x140x10	100x100x90	4	M8x30	1529	510
90	101.6	80	190x190x12	150x150x88	4	M8x30	1529	510
100	114.3	80	190x190x12	150x150x88	4	M10x30	3368	1121
125	136.7	100	190x190x12	150x150x88	4	M10x30	3368	1121
150	168.3	100	190x190x12	150x150x88	4	M10x30	3368	1121
200	219.1	150	190x190x12	150x150x88	4	M10x30	3368	1121
250	273	200	300x300x15	260x260x85	6	M10x40	9171	1936
300	323.9	250	300x300x15	260x260x85	6	M10x40	9171	1936
350	355.6	300	350x350x15	310x310x85	6	M10x40	17323	2038
400	406.4	350	400x400x15	360x360x85	6	M12x40	23445	2345
450	457	400	440x440x15	400x400x85	6	M12x40	23445	2345
500	508	450	500x500x15	460x460x85	6	M12x40	23445	2345
600	609	500	600x600x15	560x560x85	6	M12x40	23445	2345

Insulation Equipment – Fig. 470



NPS	Pipe O/D	Stud Ø	A	B	C	Max Load kg		
						Vertical Downward	Vertical Upwards	Lateral
25	33.7	M12	100	10	10	5921	3159	4280
32	42.4	M12	100	10	10	5921	3159	4280
40	48.3	M12	100	10	10	5921	3159	4280
50	60.3	M12	100	10	10	5921	3159	4280
65	76.1	M12	100	10	10	5921	3159	4280
80	88.9	M12	100	10	10	5921	3159	4280
90	101.6	M12	100	10	10	5921	3159	4280
100	114.3	M16	100	10	10	7849	3159	4280
125	136.7	M16	100	10	10	7849	3159	4280
150	168.3	M20	100	12	10	7849	3159	4280
200	219.1	M20	100	12	10	7849	3159	4280
250	273	M24	150	12	10	28542	3159	4280
300	323.9	M24	150	12	10	28542	3159	4280
350	355.6	M24	200	12	10	36391	3159	4280
400	406.4	M24	200	15	10	45872	3159	4280
450	457	M24	250	15	10	45872	3159	4280
500	508	M24	250	15	10	45872	3159	4280
600	609	M30	250	15	10	45872	3159	4280

Fig. 470
 Materials:-
 Carbon Steel
 Insulation: QPlaS

Please Specify:-

- Figure Number:
- NPS:
- Height (H):



Insulation Equipment – Fig. 101A, 101B & Fig. 114

Close-grained hardwood such as oak, iroko or obeche are often used as load bearing insulators on low temperature services.

The woods are kiln dried to ensure an acceptable moisture content and then machined in segments according to pipe dimensions.

An alternative to hardwood blocks is a unique material manufactured from selected beech veneers, which are impregnated under vacuum with thermosetting synthetic resin and then densified under heat and pressure.

The main benefit of both the above products is their high compressive strengths coupled with their obvious machining versatility.

There are numerous applications for both wood block designs and enquiries are welcome.

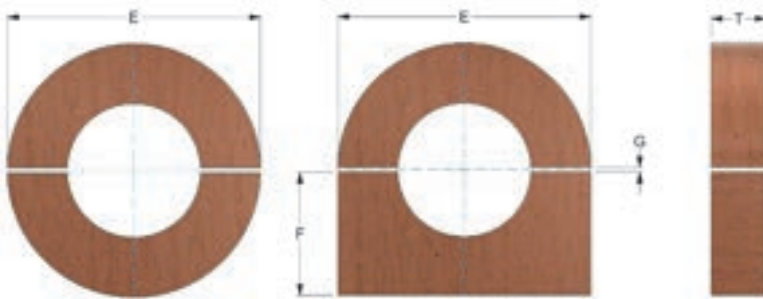


Fig. 101A

Fig. 101B

Fig. 101A & 101B
Material: Hard Wood

Please Specify:-

- Figure Number:
- Pipe O/D:
- E, F, G & T:

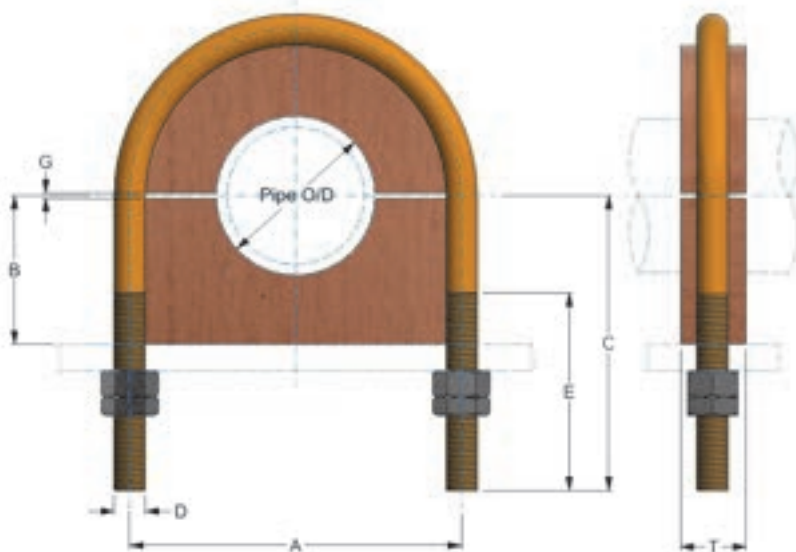


Fig. 114 – U Bolt c/w Insulation

Pipe O/D	A	B	C	D	E	G	T
21.3	50	34	85	8	58	3	25
26.9	68	38	90	8	60	3	25
33.7	68	40	88	8	60	6	25
42.4	84	44	93	8	58	6	25
48.3	86	62	120	10	76	6	50
60.3	100	68	130	10	76	10	50
76.1	130	76	138	16	76	10	50
88.9	156	84	140	16	80	10	50
114.3	186	105	160	16	80	10	75
168.3	240	130	225	20	120	10	75
219.1	344	160	250	20	120	12	75

Fig. 114
Material: Carbon Steel
Block: Cork / Rubber / Hardwood

- 2 x Full Nuts
- 2 x Locknuts

Please Specify:-

- Figure Number:
- Pipe O/D:

