

# CSP<sup>®</sup> Marine

GRE (GLASS REINFORCED EPOXY)  
FOR MARINE & OFFSHORE APPLICATION



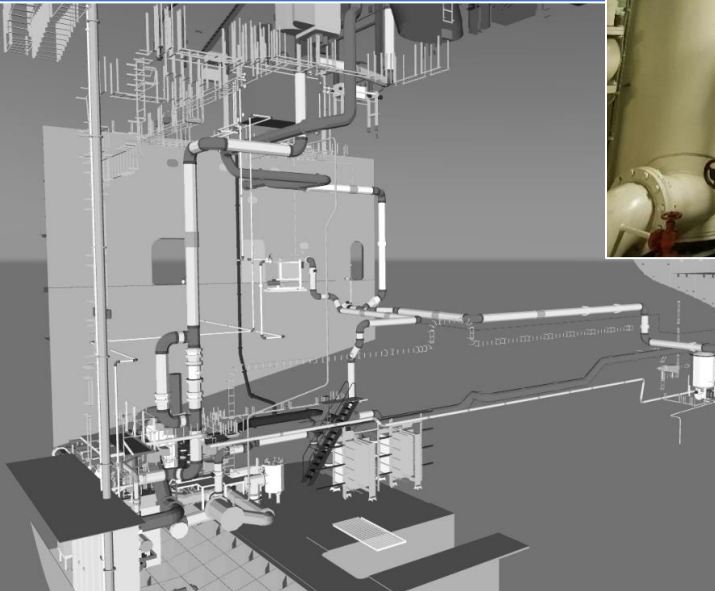
**DACC – CSP**  
**GRE PIPELINES SYSTEM**

# CSP® Marine

*Glass Reinforced Epoxy (GRE) Pipe is a non-metallic pipe with excellent corrosion resistance, and has advantages such as leakage resistance and heat insulation, light weight and high strength, long life, easy installation and low overall cost.*

*GRE piping can be used in petroleum, chemical, pharmaceutical, power, municipal water supply and drainage, industrial sewage treatment, seawater desalination, gas transportation, mining and other industries.*

*CSP® Marine is the most reliable GRE Joint System made for you.*



# DACC-CSP PROVIDES THE MOST RELIABLE GRE JOINT SYSTEM



## ADVANTAGES

### *Longer Life*

GRE Piping provides service life time twice or more when compared to normal steel piping.

### *Corrosion Resistant*

GRE Piping provides resistance to corrosion caused by chemicals, crude oil, residues, etc. GRE Piping is best choice for washwater discharge system of conventional EGCS.

### *Easier Installation*

GRE Piping is about a quarter to one-eighth the weight of steel piping which enables reduced employment of heavy equipment.

### *Cost Effective*

Adhesive joining system of GRE eliminates the employment of well trained high skilled welders and lighter weight pipe reduces time required for installation.

### *Safe Installation*

Elimination of hot work including torch cutting and welding removes possibilities of explosion and fire at work site.

### *Reduced Maintenance*

Corrosion resistant and electrically shielded nature does not require any special coating inside or outside of pipe and fittings for protection.

DESCRIPTION	GRE/GRP PIPE	STEEL PIPE
Corrosion resistant	✓ Good	✗ Bad
Specific gravity	✓ Abt. 1.9	✗ Abt. 7.5
Life	✓ 50 Years ↑	✗ Abt. 30 Years
Installation cost	✓ Low	✗ High

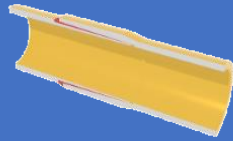
## APPLICATION

- *Ballast systems*
- *Chilled and hot water systems*
- *Chlorination systems*
- *Crude oil, cargo and stripping systems*
- *Effluent systems*
- *Fire water systems*
- *Fresh water systems*
- *Fuel oil transfer systems*
- *Inert gas systems*
- *Salt water systems*
- *Sounding systems*
- *Tank cleaning systems*
- *Vent systems*
- *Washwater discharge systems*

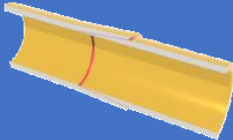


## PIPE JOINING SYSTEM

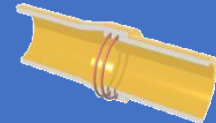
**Bell Spigot Joint**  
 Ø1~8inch  
 (Ø25~200mm)



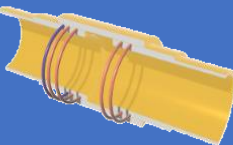
**Taper/Taper Joint**  
 Ø10~44inch  
 (Ø250~1100mm)



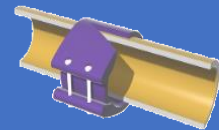
**Double O-Ring**  
 Ø1~44inch  
 (Ø25~1100mm)



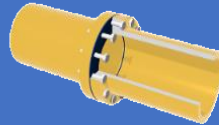
**Double O-Ring Expansion Coupling**  
 Ø1~44inch  
 (Ø25~1100mm)



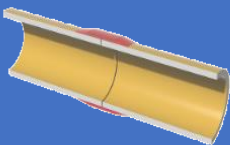
**Mechanical Coupling**  
 Ø1~44inch  
 (Ø25~1100mm)



**Flange**  
 Ø1~44inch  
 (Ø25~1100mm)



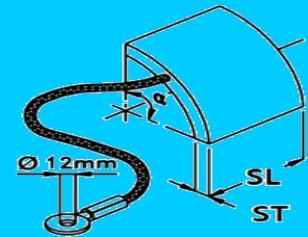
**Butt & Wrap**  
 Ø1~44inch  
 (Ø25~1100mm)



## CONDUCTIVE PIPING SYSTEM

*CSP® Marine GRE (Glass Reinforced Epoxy) for Marine & Offshore Application Piping System provide a selective option to prevent possible accumulation of potentially dangerous level of static electrical charges by making pipe, flange, fittings and adhesive an electrically continuous system. Pipe and flanges contain high strength conductive filaments, fittings include a conductive liner and conductive adhesive is used to provide this continuity.*

*Grounding saddles can be bonded on the pipe. Integral grounding cables are then bolted to the steel structure or member to drain accumulates electrical charges.*



## MECHANICAL PROPERTIES

Division	CSP M10	CSP M16	CSP M16 C
Pressure Rating	10.0 bar	16.0 bar	16.0 bar
Max. Operating Temp.	93°C/200°F	93°C/200°F	93°C/200°F
Product Size	25~1100mm	25~1100mm	25~1100mm
Inner Liner	0.5mm Resin	0.5mm Resin	0.5mm Resin
External pressure	IMO regulations	IMO regulations	IMO regulations
Hydrostatic Pressure (Design)	ASTM D-2992	ASTM D-2992	ASTM D-2992
Fire-resistance	IMO Res A753(18)	IMO Res A753(18)	IMO Res A753(18)
Conductivity	-	-	≤ 0.1 MΩ/m (ISO 14692-2:2002)



# ABOUT COMPANY

DACC-CSP produce pipes and plant products of double composite materials such as polymer composite materials FRP, GRP, and GRE. In particular, it has localized a large number of foreign-made products and possesses products of various standards and numerous technologies.

With the spirit of challenge for things that others cannot always try, the management philosophy is to produce innovative products of the highest quality.

We promise to do our best to provide a more competitive service than anyone else.

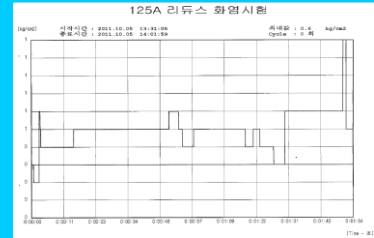


# TYPE APPROVAL CERTIFICATES



# FIRE ENDURANCE TEST

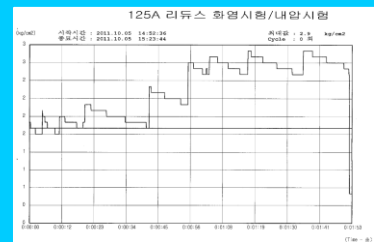
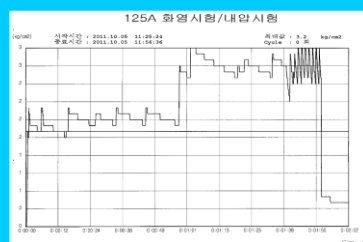
- Constant Heat Flux : Avg. 113.6 kW/m<sup>2</sup>
- Distance between burner head and pipe : (12.5 ± 1) cm
- Pressure of 3±0.5 bar inside pipe is maintained during the test
- Test Condition : IMO Res. A 753 (Level 3)



# ISO9001 & PATENT CERTIFICATES

# INTERNAL PRESSURE TEST

- Test Condition: 1.6 MPa x 15 min / 2.4 MPa x 15 min





## FIRE ENDURANCE

CSP® Marine GRE Pipe System can be used for systems (normally water filled) without additional passive fire protection. Exposure to fire will cause the outer surface of the products to char, but the functionality of the system remains.

CSP® Marine GRE Pipe System has excellent resistance to elevated temperature in IMO level 3 fire test (IMO Res. A753(18)). 250mm (10 inch) Pipe and Reducer piece withstood temperatures in excess of 1000°C.



## TESTING

CSP® Marine GRE Pipe System product is tested to 1.5 times their pressure rating before leaving the factory.

Hydrostatic test for all pre-fabricated spools are carried out with air or water, normally air for small bored pipes up to 150 mm (6 inch) and water for over 150 mm.

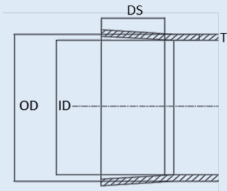
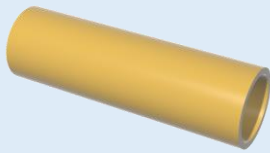
For qualification test during certification of the product, long-term hydrostatic test is carried out in accordance with ASTM D-9292.



# PIPE & FITTINGS PRODUCED

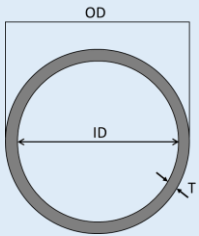
## PIPE CSP® M16 / M16 C (1.6 Mpa)

Nominal Pipe Size		Inside Dia.	Normal Wall Thickness	Outer Dia.	Lenth	Average Pipe Weight
mm	inch	mm	mm	mm	m	Kg/m
25	1	27	3.5	35	4	0.7
40	1.5	42	3.5	50	4	1
50	2	53	3.5	61	6	1.2
65	2.5	70	3.5	78	6	1.6
80	3	82	4.2	91.4	6	1.8
100	4	105	4.2	114.4	6	2.3
125	5	132	4.2	141.4	11.9	3.5
150	6	159	4.9	169.8	11.9	4.8
200	8	209	5.6	221.2	11.9	7.2
250	10	263	7	278	11.9	11.3
300	12	314	8.4	331.8	11.9	16.2
350	14	338	9.8	358.6	11.9	20.1
400	16	386	11.2	409.4	11.9	26.6
450	18	434	11.9	458.8	11.9	31.7
500	20	482	13.3	509.6	11.9	39.4
550	22	530	14.7	560.4	11.9	47.8
600	24	579	15.4	610.8	11.9	54.7
650	26	650	17.5	686	11.9	69.7
700	28	700	18.9	738.8	11.9	81.1
750	30	750	20.3	791.6	11.9	93.3
800	32	800	21.7	844.4	11.9	106.4
900	36	900	24.5	950	11.9	135.2
1000	40	1000	27.3	1055.6	11.9	167.4
1100	44	1100	30.1	1161.2	11.9	203



## PIPE CSP® M10 / M10 C (1.0 Mpa)

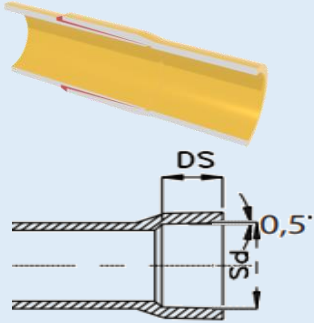
Nominal Pipe Size		Inside Dia.	Normal Wall Thickness	Outer Dia.	Lenth	Average Pipe Weight
mm	inch	mm	mm	mm	m	Kg/m
25	1	27	3.5	35	4	0.7
40	1.5	42	3.5	50	4	1
50	2	53	3.5	61	6	1.2
65	2.5	70	3.5	78	6	1.6
80	3	82	4.2	91.4	6	1.8
100	4	105	4.2	114.4	6	2.3
125	5	132	4.2	141.4	11.9	3.5
150	6	159	4.9	169.8	11.9	4.8
200	8	209	4.9	219.8	11.9	6.3
250	10	263	4.9	273.8	11.9	10.2
300	12	314	5.6	326.2	11.9	12.1
350	14	338	6.3	351.6	11.9	13
400	16	386	7	401	11.9	16.5
450	18	434	7.7	450.4	11.9	20.3
500	20	482	8.4	499.8	11.9	24.6
550	22	530	9.1	549.2	11.9	29.3
600	24	579	9.8	599.6	11.9	32
650	26	650	9.8	670.6	11.9	38.6
700	28	700	10.5	722	11.9	41.5
750	30	750	10.5	772	11.9	54.1
800	32	800	11.2	823.4	11.9	61.1
900	36	900	11.9	924.8	11.9	72.5
1000	40	1000	12.6	1026.2	11.9	93.3
1100	44	1100	13.3	1127.6	11.9	126.2



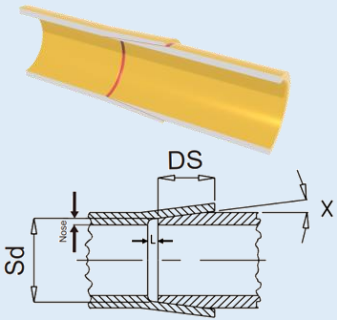
# PIPE & FITTINGS PRODUCED

## JOINING SYSTEM

### Bell & Spigot Joint

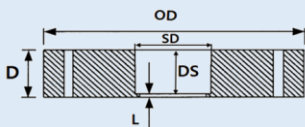
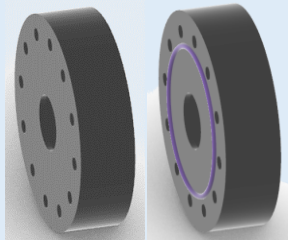


### Taper/Taper Joint



Nominal Pipe Size		Inside Dia	Depth Size (DS)		Spigot Dia (Sd)		Taper Angle (X)	
mm	inch		M10(C)	M16(C)	M10(C)	M16(C)	M10(C)	M16(C)
25	1	27	27	27	32.5	32.5	0.5	0.5
40	1.5	42	32	32	47.8	47.8	0.5	0.5
50	2	53	46	46	58.8	58.8	0.5	0.5
65	2.5	70	46	46	75.8	75.8	0.5	0.5
80	3	82	46	46	88.2	88.2	0.5	0.5
100	4	105	46	46	112.3	112.3	0.5	0.5
125	5	132	57	57	139.6	139.6	0.5	0.5
150	6	159	57	57	166.6	166.6	0.5	0.5
200	8	209	65	65	216.6	216.6	0.5	0.5
250	10	263	67.2	80	269	272.1	2	2.1
300	12	314	73.2	95	320	325	2.4	2.1
350	14	338	88.8	100	345	351.5	2.1	2
400	16	386	100	110	393	401.7	2.3	2
450	18	434	104.3	114	443	450.8	2	2
500	20	482	110.7	127	492	500.8	2	2
550	22	530	121	178	538.2	550.1	2.6	1.7
600	24	579	127.2	178	588.4	598.9	2.5	1.9
650	26	650	140	178	659	674.1	2.4	1.9
700	28	700	150	178	710	726.9	2.3	1.9
750	30	750	160	178	762	779.7	1.8	1.9
800	32	800	176	178	813	832.5	1.7	1.9
900	36	900	201.9	203	913	936.6	1.7	1.9
1000	40	1000	201.9	240	1014	1035	1.7	2.5
1100	44	1100	220	269	1115	1137.6	1.6	2.5

## FLANGES



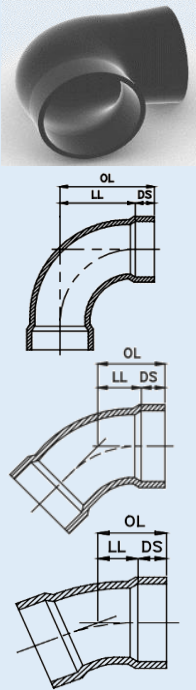
Nominal Pipe Size		PIPE Inside Dia.	EDGE (L)	Total Thickness (D)		Spigot Depth (DS)	
mm	inch			M10(C)	M16(C)	M10(C)	M16(C)
25	1	27	4	31	31	33	33
40	1.5	42	4	36	36	48	48
50	2	53	4	50	50	59	59
65	2.5	70	4	50	50	76	76
80	3	82	4	50	50	88	88
100	4	105	4	50	50	112	112
125	5	132	4	61	61	140	140
150	6	159	6	63	63	167	167
200	8	209	6	71	71	217	217
250	10	263	6	73	86	269	272
300	12	314	6	79	101	320	325
350	14	338	6	95	106	345	351
400	16	386	6	106	116	393	402
450	18	434	6	110	120	443	451
500	20	482	6	117	133	492	501
550	22	530	7	128	185	538	550
600	24	579	7	134	185	588	599
650	26	650	6	147	185	659	674
700	28	700	7	157	185	710	727
750	30	750	10	170	188	762	780
800	32	800	10	186	188	813	833
900	36	900	10	212	213	913	937
1000	40	1000	12	214	252	1014	1035
1100	44	1100	15	235	284	1115	1138



# PIPE & FITTINGS PRODUCED

## ELBOWS

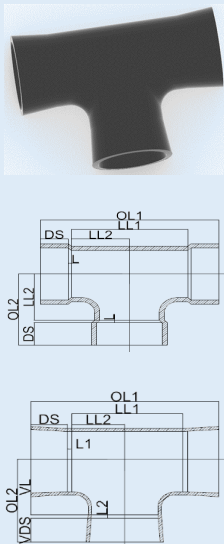
Φ200 and below :  
Bell & Spigot Joint  
Φ250 and over :  
Taper/Taper Joint



Nominal Pipe Size		PIPE In-Dia.	Min. Wall Thick.		Depth Size (DS)		EDGE (L)	90°	45°	22.5°
			M10(C)	M16(C)	M10(C)	M16(C)		Overall Length (OL)		
mm	inch	mm	mm	mm	mm	mm	mm	mm	mm	
25	1	27	3.5	3.5	27	27	4	92	49	36
40	1.5	42	3.5	3.5	32	32	4	113	61	41
50	2	53	3.5	3.5	46	46	4	122	81	59
65	2.5	70	3.5	3.5	46	46	4	143	89	64
80	3	82	4.2	4.2	46	46	4	160	97	67
100	4	105	4.2	4.2	46	46	4	198	110	75
125	5	132	4.2	4.2	57	57	4	252	141	100
150	6	159	4.9	4.9	57	57	6	286	152	100
200	8	209	4.9	5.6	65	65	6	380	202	141
250	10	263	4.9	7	67	80	6	471	249	148
300	12	314	5.6	8.4	73	95	6	567	300	181
350	14	338	6.3	9.8	89	100	6	464	225	171
400	16	386	7	11.2	100	110	6	512	252	195
450	18	434	7.7	11.9	104	114	6	572	305	224
500	20	482	8.4	13.3	111	127	6	635	337	228
550	22	530	9.1	14.7	121	178	7	737	411	288
600	24	579	9.8	15.4	127	178	7	762	430	300
650	26	650	9.8	17.5	140	178	6	838	453	312
700	28	700	10.5	18.9	150	178	7	889	473	320
750	30	750	10.5	20.3	160	178	10	940	500	330
800	32	800	11.2	21.7	176	178	10	991	515	340
900	36	900	11.9	24.5	202	203	10	1118	603	385
1000	40	1000	12.6	27.3	202	240	12	1305	715	452
1100	44	1100	13.3	30.1	220	269	15	1391	770	493

## EQUAL TEES

Φ200 and below :  
Bell & Spigot Joint  
Φ250 and over :  
Taper/Taper Joint

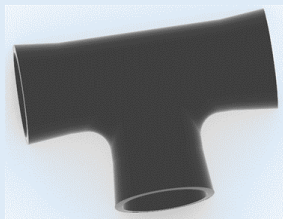
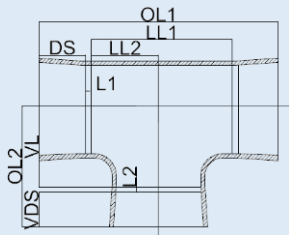
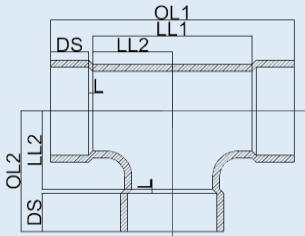


Nominal Pipe Size		PIPE In-Dia.	Min. Wall Thick.		Depth Size (DS)		EDGE (L)	LL1	VL
			M10(C)	M16(C)	M10(C)	M16(C)			
mm	inch	mm	mm	mm	mm	mm	mm	mm	
25	1	27	3.5	3.5	27	27	4	52	26
40	1.5	42	3.5	3.5	32	32	4	76	38
50	2	53	3.5	3.5	46	46	4	100	50
65	2.5	70	3.5	3.5	46	46	4	132	66
80	3	82	4.2	4.2	46	46	4	156	78
100	4	105	4.2	4.2	46	46	4	202	101
125	5	132	4.2	4.2	57	57	4	240	120
150	6	159	4.9	4.9	57	57	6	272	136
200	8	209	4.9	5.6	65	65	6	318	159
250	10	263	4.9	7	67	80	6	382	191
300	12	314	5.6	8.4	73	95	6	446	223
350	14	338	6.3	9.8	89	100	6	508	254
400	16	386	7	11.2	100	110	6	572	286
450	18	434	7.7	11.9	104	114	6	636	318
500	20	482	8.4	13.3	111	127	6	700	350
550	22	530	9.1	14.7	121	178	7	758	379
600	24	579	9.8	15.4	127	178	7	822	411
650	26	650	9.8	17.5	140	178	7	906	453
700	28	700	10.5	18.9	150	178	7	950	475
750	30	750	10.5	20.3	160	178	10	996	498
800	32	800	11.2	21.7	176	178	10	1070	535
900	36	900	11.9	24.5	202	203	10	1174	587
1000	40	1000	12.6	27.3	202	240	12	1276	638
1100	44	1100	13.3	30.1	220	269	15	1370	685

# PIPE & FITTINGS PRODUCED

## REDUCING TEES M16 (C)

**Φ200 and below :**  
**Bell & Spigot Joint**  
**Φ250 and over :**  
**Taper/Taper Joint**

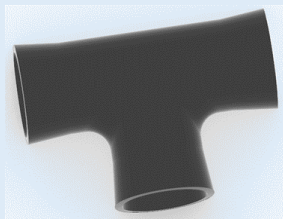
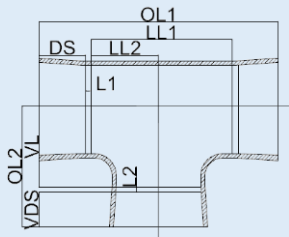
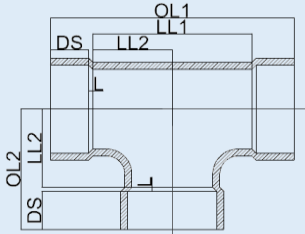


Nominal Pipe Size		Inside Dia'	Min. Wall Thick.	Depth Size (DS)	Edge (L)	SIZE	LL1	OL1	DS	L1	LL2	OL2	VDS	L2
mm	inch													
40	1.5	42	3.5	32	4	40×25	26	124	32	4	26	57	27	4
						50	2	53	3.5	46	4	50×25	60	220
65	2.5	70	3.5	46	4	65×25	-4	92	46	4	-4	0		4
						65×40	-4	92	46	4	-4	0		4
80	3	82	4.2	46	4	65×50	-4	92	46	4	-4	0		4
						80×25	82	264	46	4	72	103	27	4
100	4	105	4.2	46	4	80×40	82	264	46	4	76	108	32	4
						80×50	82	264	46	4	72	122	46	4
125	5	131.9	4.2	57	4	100×25	68	236	46	4	190	221	27	4
						100×40	85	270	46	4	190	226	32	4
150	6	159	4.9	57	6	100×50	101	302	46	4	85	135	46	4
						100×80	101	302	46	4	94	144	46	4
200	8	208.8	5.6	65	6	125×50	123	368	57	4	98	148	46	4
						125×80	123	368	57	4	107	157	46	4
250	10	262.9	7	80	6	125×100	123	368	57	4	114	164	46	4
						150×25	77	280	57	6	215	248	27	6
300	12	313.7	8.4	95	6	150×40	95	316	57	6	215	253	32	6
						150×50	137	400	57	6	108	160	46	6
350	14	337.6	9.8	100	6	150×80	137	400	57	6	118	170	46	6
						150×100	137	400	57	6	124	176	46	6
400	16	406.4	10.6	110	6	150×125	137	400	57	6	130	193	57	6
						200×25	82	306	65	6	239	272	27	6
450	18	457.0	12.4	120	6	200×40	82	306	65	6	239	277	32	6
						200×50	82	306	65	6	239	291	46	6
500	20	508.0	14.2	130	6	200×80	182	506	65	6	143	195	46	6
						200×100	182	506	65	6	156	208	46	6
550	22	559.0	16.0	140	6	200×150	182	506	65	6	162	225	57	6
						250×25	82	336	80	6	267	300	27	6
600	24	610.0	17.8	150	6	250×40	82	336	80	6	267	305	32	6
						250×50	82	336	80	6	267	319	46	6
650	26	661.0	19.6	160	6	250×80	94	360	80	6	267	319	46	6
						250×100	220	612	80	6	178	230	46	6
700	28	712.0	21.4	170	6	250×150	220	612	80	6	188	251	57	6
						250×200	220	612	80	6	197	268	65	6
750	30	763.0	23.2	180	6	300×25	82	366	95	6	292	325	27	6
						300×40	82	366	95	6	292	330	32	6
800	32	814.0	25.0	190	6	300×50	82	366	95	6	292	344	46	6
						300×80	94	390	95	6	292	344	46	6
850	34	865.0	26.8	200	6	300×100	267	736	95	6	200	252	46	6
						300×150	267	736	95	6	213	276	57	6
900	36	916.0	28.6	210	6	300×200	267	736	95	6	223	294	65	6
						300×250	267	736	95	6	235	321	80	6
950	38	967.0	30.4	220	6	350×25	82	376	100	6	307	340	27	6
						350×40	82	376	100	6	307	345	32	6
1000	40	1018.0	32.2	230	6	350×50	82	376	100	6	307	359	46	6
						350×80	94	400	100	6	307	359	46	6
1050	42	1069.0	34.0	240	6	350×100	107	426	100	6	307	359	46	6
						350×150	266	744	100	6	238	301	57	6
1100	44	1120.0	35.8	250	6	350×200	266	744	100	6	248	319	65	6
						350×250	266	744	100	6	261	347	80	6
1150	46	1171.0	37.6	260	6	350×300	266	744	100	6	282	383	95	6

# PIPE & FITTINGS PRODUCED

## REDUCING TEES M16 (C) (continued)

**Φ200 and below :**  
**Bell & Spigot Joint**  
**Φ250 and over :**  
**Taper/Taper Joint**

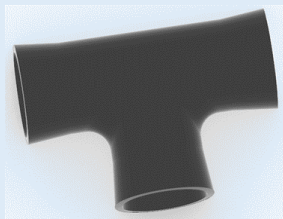
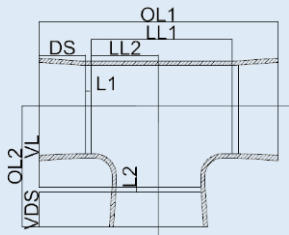
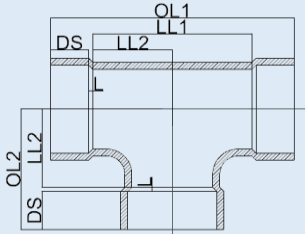


Nominal Pipe Size		Inside Dia'	Min. Wall Thick.	Depth Size (DS)	Edge (L)	SIZE	LL1	OL1	DS	L1	LL2	OL2	VDS	L2
mm	inch													
400	16	385.8	11.2	110	6	400×25	82	396	110	6	332	365	27	6
						400×40	82	396	110	6	332	370	32	6
						400×50	82	396	110	6	332	384	46	6
						400×80	94	420	110	6	332	384	46	6
						400×100	107	446	110	6	332	384	46	6
						400×150	289	810	110	6	258	321	57	6
						400×200	289	810	110	6	267	338	65	6
						400×250	289	810	110	6	277	363	80	6
						400×300	289	810	110	6	298	399	95	6
						400×350	289	810	110	6	286	392	100	6
450	18	433.8	11.9	114	6	450×25	82	404	114	6	352	385	27	6
						450×40	82	404	114	6	352	390	32	6
						450×50	82	404	114	6	352	404	46	6
						450×80	94	428	114	6	352	404	46	6
						450×100	107	454	114	6	352	404	46	6
						450×150	132	504	114	6	361	424	57	6
						450×200	318	876	114	6	300	371	65	6
						450×250	318	876	114	6	313	399	80	6
						450×300	318	876	114	6	322	423	95	6
						450×350	318	876	114	6	311	417	100	6
500	20	482.1	13.3	127	6	500×25	82	430	127	6	376	409	27	6
						500×40	82	430	127	6	376	414	32	6
						500×50	82	430	127	6	376	428	46	6
						500×80	94	454	127	6	376	428	46	6
						500×100	107	480	127	6	376	428	46	6
						500×150	132	530	127	6	385	448	57	6
						500×250	350	966	127	6	338	424	80	6
						500×300	350	966	127	6	348	449	95	6
						500×350	350	966	127	6	337	443	100	6
						500×400	350	966	127	6	338	454	110	6
550	22	530	14.7	178	7	550×200	381	1132	178	7	350	422	65	7
						550×250	381	1132	178	7	363	450	80	7
						550×300	381	1132	178	7	372	474	95	7
						550×350	381	1132	178	7	361	468	100	7
						550×400	381	1132	178	7	363	480	110	7
						550×450	381	1132	178	7	368	489	114	7
						550×500	381	1132	178	7	374	508	127	7
						600	24	579	15.4	178	7	600×25	81	532
600×40	81	532	178	7	423							462	32	7
600×50	81	532	178	7	423							476	46	7
600×80	93	556	178	7	423							476	46	7
600×100	106	582	178	7	423							476	46	7
600×150	131	632	178	7	432							496	57	7
600×200	412	1194	178	7	405							477	65	7
600×250	412	1194	178	7	379							466	80	7
600×300	412	1194	178	7	410							512	95	7
600×350	412	1194	178	7	387							494	100	7
600×400	412	1194	178	7	387							504	110	7
600×450	412	1194	178	7	406							527	114	7
600×500	412	1194	178	7	399							533	127	7

# PIPE & FITTINGS PRODUCED

## REDUCING TEES M16 (C) (continued)

**Φ200 and below :**  
**Bell & Spigot Joint**  
**Φ250 and over :**  
**Taper/Taper Joint**

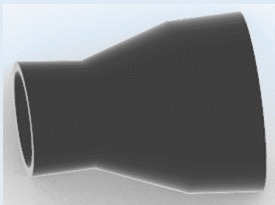
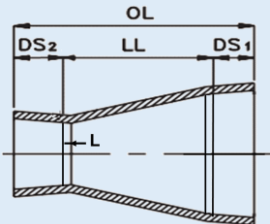
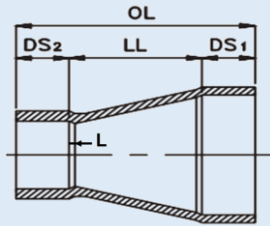


Nominal Pipe Size		Inside Dia'	Min. Wall Thick.	Depth Size (DS)	Edge (L)	SIZE	LL1	OL1	DS	L1	LL2	OL2	VDS	L2
mm	inch													
700	28	700	18.9	178	7	700×25	81	532	178	7	484	518	27	7
						700×40	81	532	178	7	484	523	32	7
						700×50	81	532	178	7	484	537	46	7
						700×80	93	556	178	7	484	537	46	7
						700×100	106	582	178	7	484	537	46	7
						700×150	131	632	178	7	493	557	57	7
						700×350	475	1320	178	7	483	590	100	7
						700×400	475	1320	178	7	493	610	110	7
						700×450	475	1320	178	7	493	614	114	7
						700×500	475	1320	178	7	499	633	127	7
750	30	750	20.3	178	10	750×25	78	532	178	10	506	543	27	10
						750×40	78	532	178	10	506	548	32	10
						750×50	78	532	178	10	506	562	46	10
						750×80	90	556	178	10	506	562	46	10
						750×100	103	582	178	10	506	562	46	10
						750×150	128	632	178	10	515	582	57	10
						750×300	498	1372	178	10	755	860	95	10
						750×350	498	1372	178	10	712	822	100	10
						750×400	498	1372	178	10	688	808	110	10
						750×450	498	1372	178	10	478	602	114	10
800	32	800	21.7	178	10	800×25	78.0	532	178	10	531	568	27	10
						800×40	78.0	532	178	10	531	573	32	10
						800×50	78.0	532	178	10	531	587	46	10
						800×80	90.0	556	178	10	531	587	46	10
						800×100	103.0	582	178	10	531	587	46	10
						800×150	128.0	632	178	10	540	607	57	10
						800×500	535.0	1446	178	10	513	650	127	10
						800×600	535.0	1446	178	10	513	701	178	10
						800×700	535.0	1446	178	10	524	712	178	10
						800×750	535.0	1446	178	10	524	712	178	10
900	36	900	24.5	203	10	900×25	78	582	203	10	581	618	27	10
						900×40	78	582	203	10	581	623	32	10
						900×50	78	582	203	10	581	637	46	10
						900×80	90	606	203	10	581	637	46	10
						900×100	103	632	203	10	581	637	46	10
						900×150	128	682	203	10	590	657	57	10
						900×400	600	1626	203	10	553	673	110	10
						900×450	600	1626	203	10	553	677	114	10
						900×500	600	1626	203	10	553	690	127	10
						900×600	600	1626	203	10	531	719	178	10
1000	40	1000	27.3	240	12	1000×25	108	720	240	12	629	668	27	12
						1000×40	108	720	240	12	629	673	32	12
						1000×50	108	720	240	12	629	687	46	12
						1000×80	120	744	240	12	629	687	46	12
						1000×100	133	770	240	12	629	687	46	12
						1000×600	721	1946	240	12	581	771	178	12
						1000×700	721	1946	240	12	621	811	178	12
						1000×750	721	1946	240	12	621	811	178	12
						1000×800	721	1946	240	12	640	830	178	12
						1000×900	721	1946	240	12	640	855	203	12

# PIPE & FITTINGS PRODUCED

## CONCENTRIC REDUCERS M16 (C)

**Φ200 and below :**  
 Bell & Spigot Joint  
**Φ250 and over :**  
 Taper/Taper Joint

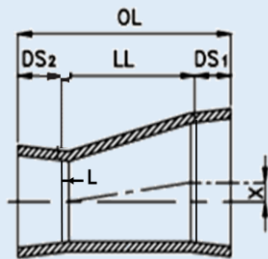
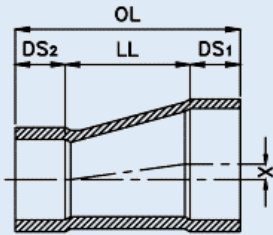


Nominal Pipe Size		Inside Dia'	Min. Wall Thick.	Depth Size (DS)	Edge (L)	SIZE	Depth Size (DS)	LL	OL
mm	inch	mm	mm	mm	mm	mm	mm	mm	mm
40	1.5	42	3.5	32	4	40×25	27	32	91
50	2	53	3.5	46	4	50×25	27	64	137
						50×40	42	32	127
80	3	82	4.2	46	4	80×40	32	76	154
						80×50	46	54	146
100	4	105	4.2	46	4	100×50	46	76	168
						100×80	46	73	165
125	5	131.9	4.2	57	4	125×80	46	74	177
						125×100	46	74	177
150	6	159	4.9	57	6	150×80	46	97	200
						150×100	46	94	197
						150×125	57	110	224
200	8	208.8	5.6	65	6	200×100	46	138	249
						200×125	57	126	248
						200×150	57	119	241
250	10	262.9	7	80	6	250×150	57	117	254
						250×200	65	105	250
300	12	313.7	8.4	95	6	300×200	65	149	309
						300×250	80	137	312
350	14	337.6	9.8	100	6	350×250	80	184	364
						350×300	95	178	373
400	16	385.8	11.2	110	6	400×300	95	165	370
						400×350	100	152	362
450	18	433.8	11.9	114	6	450×400	110	103	327
						500×400	110	225	462
500	20	482.1	13.3	127	6	500×450	114	123	364
						550×400	110	340	628
550	22	530	14.7	178	7	550×450	114	228	520
						550×500	127	106	411
600	24	579	15.4	178	7	600×400	110	453	741
						600×450	114	353	645
						600×500	127	230	535
						600×550	178	126	482
700	28	700	18.9	178	7	700×400	110	765	1053
						700×450	114	661	953
						700×500	127	542	847
						700×600	178	311	667
750	30	750	20.3	178	10	750×400	100	876	1154
						750×450	114	775	1067
						750×500	127	653	958
						750×600	178	422	778
						750×650	178	240	596
800	32	800	21.7	178	10	800×400	100	1023	1301
						800×450	114	920	1212
						800×500	127	798	1103
						800×600	178	570	926
						800×750	178	259	615
900	36	900	24.5	203	10	900×500	127	1029	1359
						900×600	178	799	1180
						900×700	178	487	868
						900×750	178	375	756
1000	40	1,000	27.3	240	12	1000×900	203	285	728

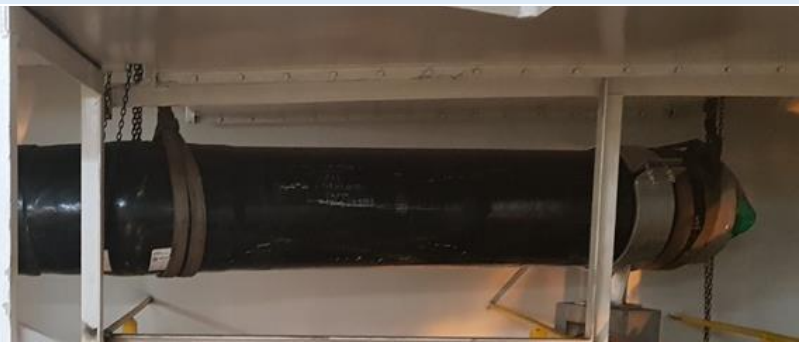
# PIPE & FITTINGS PRODUCED

## ECCENTRIC REDUCERS M16 (C)

**Φ200 and below :**  
**Bell & Spigot Joint**  
**Φ250 and over :**  
**Taper/Taper Joint**



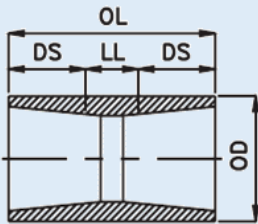
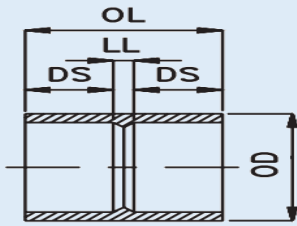
Nominal Pipe Size		Inside Dia'	Min. Wall Thick.	Depth Size (DS1)	Edge (L)	Size	Depth Size (DS2)	LL	OL	X
mm	inch	mm	mm	mm	mm	mm	mm	mm	mm	mm
40	1.5	42	3.5	32	4	40×25	27	56	123	7
50	2	53	3.5	46	4	50×25	27	100	181	13
						50×40	32	44	130	6
80	3	82	4.2	46	4	80×40	32	150	236	20
						80×50	46	108	208	14
100	4	105	4.2	46	4	100×50	46	200	300	27
						100×80	46	93	193	12
125	5	131.9	4.2	57	4	125×100	46	101	212	14
						150×80	46	293	406	39
150	6	159	4.9	57	6	150×100	46	200	313	27
						150×125	57	100	224	13
						200×100	46	390	511	52
200	8	208.8	5.6	65	6	200×150	57	190	324	25
						250×150	57	392	541	53
250	10	262.9	7	80	6	250×200	65	202	359	27
						300×200	65	390	562	53
300	12	313.7	8.4	95	6	300×250	80	190	377	26
						350×250	80	308	500	42
350	14	337.6	9.8	100	6	350×300	95	118	325	16
						400×300	95	306	523	41
400	16	385.8	11.2	110	6	400×350	100	188	410	25
						450×300	95	450	671	63
450	18	433.8	11.9	114	6	450×350	100	322	548	43
						450×400	110	197	433	18
						500×400	110	324	573	39
500	20	482.1	13.3	127	6	500×450	114	197	450	22
						600×400	110	580	881	93
600	24	579	15.4	178	7	600×450	114	450	755	73
						600×500	127	325	644	48
750	30	750	20.3	178	10	750×400	110	451	759	86
900	36	900	24.5	203	10	900×400	110	832	1165	161
1000	40	1000	27.3	240	12	1000×800	178	739	1179	100
						1000×900	203	419	886	52



# PIPE & FITTINGS PRODUCED

## COUPLERS

**Φ200 and below :**  
 Bell & Spigot Joint  
**Φ250 and over :**  
 Taper/Taper Joint



Nominal Pipe Size	Inside Dia'	Edge (L)	M 10 (C)					M16 (C)					
			LL	DS	OL	(POD)	OD	LL	DS	OL	(POD)	OD	
mm	inch	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm
25	1	27	4	8	27	62	35	44	8	27	62	35	44
40	1.5	42	4	8	32	72	50	58.8	8	32	72	50	59
50	2	53	4	8	46	100	61	70	8	46	100	61	70
65	2.5	70	4	8	46	100	78	87	8	46	100	78	87
80	3	82	4	8	46	100	91	102	8	46	100	91	102
100	4	105	4	8	46	100	114	125	8	46	100	114	125
125	5	132	4	8	57	122	141	152	8	57	122	141	152
150	6	159	6	12	57	126	170	182	12	57	126	170	182
200	8	209	6	12	65	142	220	232	12	65	142	221	233
250	10	263	6	24	67	158	274	286	24	80	184	278	290
300	12	314	6	24	73	170	326	340	24	95	214	332	346
350	14	338	6	24	89	202	352	367	24	100	224	359	375
400	16	386	6	24	100	224	401	418	24	110	244	409	427
450	18	434	6	24	104	233	450	469	24	114	252	459	478
500	20	482	6	24	111	245	500	519	24	127	278	510	530
550	22	530	7	28	121	270	549	570	28	178	384	560	583
600	24	579	7	28	127	282	600	622	28	178	384	611	635
650	26	650	7	28	140	308	671	693	28	178	384	686	710
700	28	700	7	28	150	328	722	746	28	178	384	739	765
750	30	750	10	40	160	360	772	796	40	178	396	792	818
800	32	800	10	40	176	392	823	849	40	178	396	844	872
900	36	900	10	40	202	444	925	952	40	203	446	950	980
1000	40	1,000	12	48	202	452	1026	1055	48	240	528	1056	1087
1100	44	1,100	15	60	220	500	1128	1158	60	269	598	1161	1195





**DACC – CSP**  
**GRE PIPELINES SYSTEM**

**Factory #1**

30-82 Sangdong-ro, Saenglim-myeon,  
Gimhae-si, Gyeongsangnam-do, Korea

**Factory #2**

16, Dongbuk-ro 473beon-gil, Sangdong-  
myeon, Gimhae-si, Gyeongsangnam-do,  
Korea

**HMPS**

**HAEMYUNG PROJECT SERVICES**

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of DACC-CSP.*

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