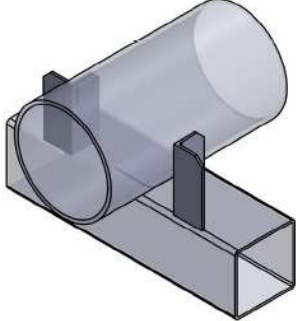
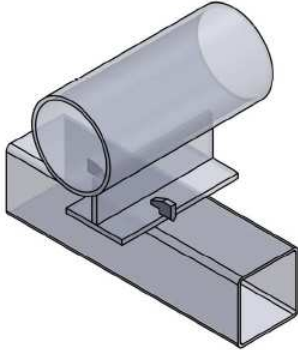
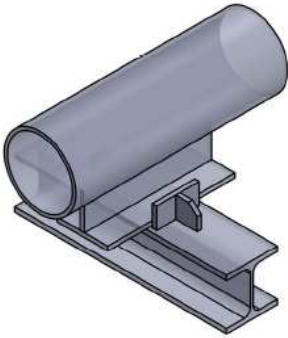
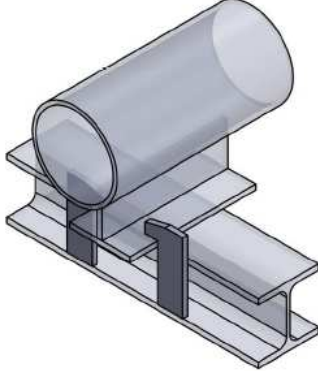
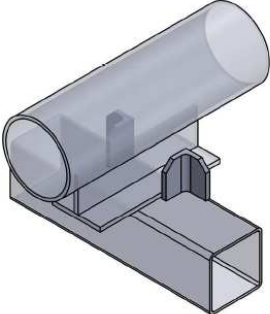
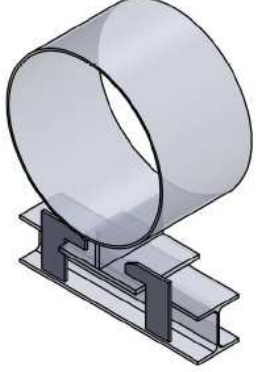
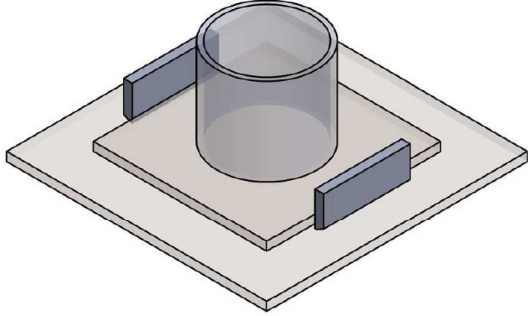
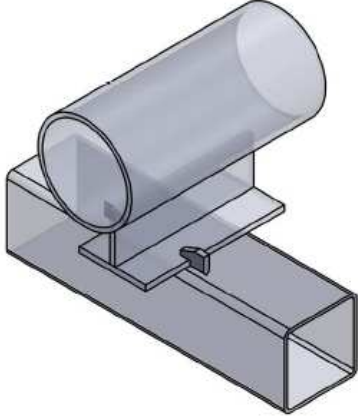
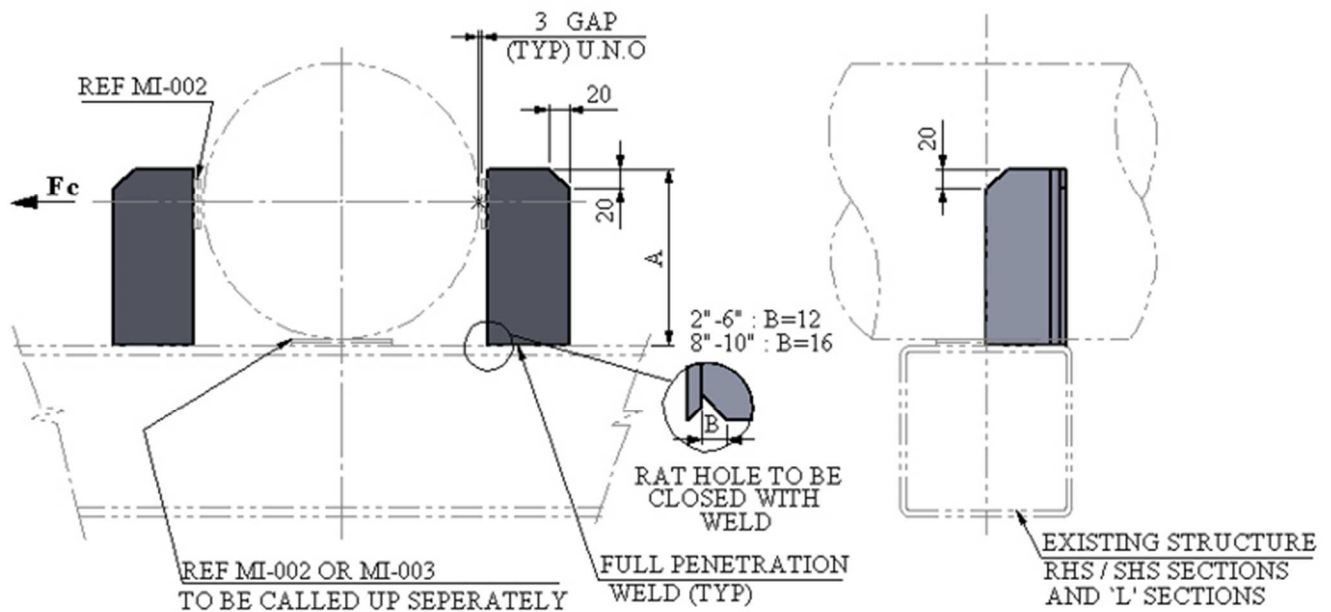


4. WELDED LINE GUIDES			
<p>4.1</p>	<p><b>T-LG-001</b>  <b>WELDED LINE GUIDE FOR CS,SS &amp; ALLOY LINES 2" – 10"</b></p> 	<p>4.4</p>	<p><b>T-LG-004</b>  <b>WELDED LINE GUIDE / HOLD DOWN WITH 3mm GAPS</b></p> 
<p>4.2</p>	<p><b>T-LG-002</b>  <b>WELDED LINE GUIDE</b>  <b>50-1200 mm / 2" -48"</b></p> 	<p>4.5</p>	<p><b>T-LG-005</b>  <b>WELDED LINE GUIDE / HOLD DOWN</b>  <b>VARIABLE GAPS</b></p> 
<p>4.3</p>	<p><b>T-LG-003</b>  <b>WELDED LINE GUIDE</b>  <b>50-1200 mm / 2" -48"</b></p> 	<p>4.6</p>	<p><b>T-LG-006</b>  <b>WELDED LINE GUIDE / HOLD DOWN</b>  <b>(HEAVY DUTY)</b></p> 

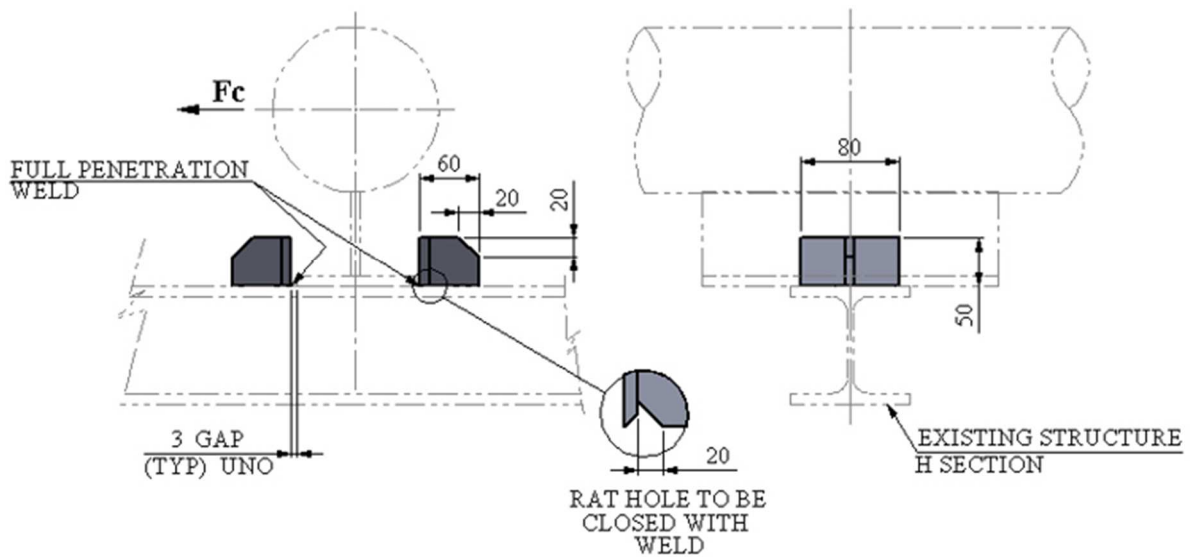
4. WELDED LINE GUIDES			
4.7	<b>T-LG-007</b> <b>GUIDE FOR POST BASE PLATES</b>	4.8	<b>T-LG-008</b> <b>WELDED LINE GUIDE / HOLD DOWN 1mm</b> <b>GAP</b>
			

**4.1 WELDED LINE GUIDE FOR CS,SS & ALLOY LINES 50-250mm / 2"-10"**
**LG-001**


TYPICAL PART NUMBER	AVAILABLE MATERIAL SHORT CODE	STD DETAIL TEMPERATURE LIMITATION	
		MAX. DESIGN TEMP	MIN. DESIGN TEMP.
T-LG-001-(DN)-CS	CS	150°C	(-) 46°C
T-LG-001-(DN)-SS	SS	150°C	(-) 46°C

TYPE	LINE SIZE			DESCRIPTION	A	MAX. LOADS Fc (kN)		INSULATING PAD	WEIGHTS (in kg)	
	DN (mm)	NPS in (inch)	NPS in (mm)			CS	SS		CS	SS
T-LG-001-0050	DN 50	2"	60.3	L60x60x6	65	23	13.5	MI-002-000A	0.68	0.72
T-LG-001-0080	DN 80	3"	88.9	L60x60x6	65	15	9		0.68	0.72
T-LG-001-0100	DN 100	4"	114.3	L60x60x6	100	12	7		1.10	1.12
T-LG-001-0125	DN 125	5"	141.3	L60x60x6	100	10	6		1.10	1.12
T-LG-001-0150	DN 150	6"	168.3	L60x60x6	150	8	5	MI-002-000B	1.5	1.52
T-LG-001-0200	DN 200	8"	219.1	L80x80x8	175	15	9		3.37	3.42
T-LG-001-0250	DN 250	10"	273.0	L80x80x8	175	12	7		3.37	3.42

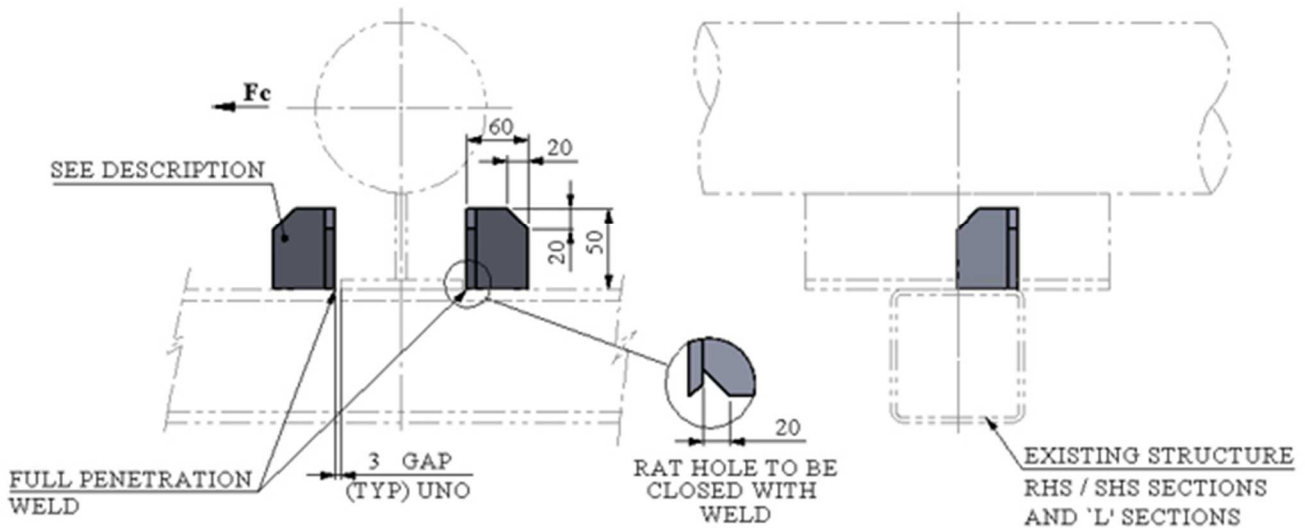
All Welds to be a = 0.7 x WT, but max 4 mm CFW.  
Guide to be Site located and welded.

**4.2 WELDED LINE GUIDE , 50-1200mm / 2"-48"**
**LG-002**


TYPICAL PART NUMBER	AVAILABLE MATERIAL SHORT CODE	STD DETAIL TEMPERATURE LIMITATION	
		MAX. DESIGN TEMP	MIN. DESIGN TEMP.
T- LG-002-000A-SS	SS	350°c	-196°c (-105°c) ( Refer Note)
T- LG-002-000A-CS	CS	350°c	-20°c
T- LG-002-000A-LCS	LCS	350°c	-46°c
T- LG-002-000A-LD	LD	350°c	-46°c
T- LG-002-000A-DU	DU	100°c (Operating)	-46°c

TYPE	LINE SIZE	DESCRIPTION	QTY	MAX. LOADS (kN)		SUPPORT FUNCTION	WEIGHTS (in kg)	
				CS	SS		CS	SS
T-LG-002-000A	DN 50 - DN 1200 mm / 2" - 48"	10 THK PLATE	2	80	47	RS, LG	1.02	1.3

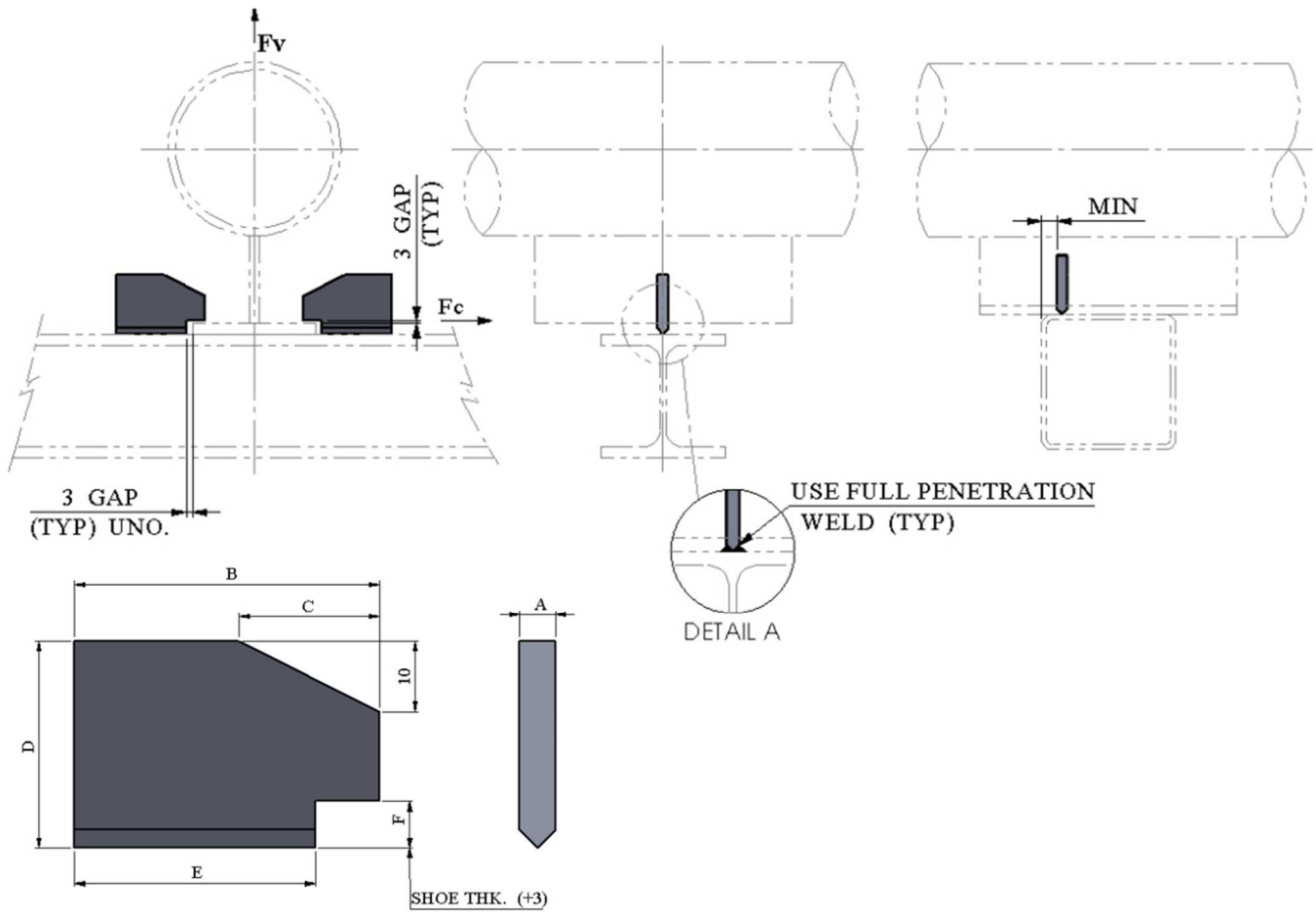
All Welds to be  $a = 0.7 \times WT$ , but max 4 mm CFW.  
 Guide to be Site located and welded.  
 Guide to be fabricated from 10mm thick plate.  
 Impact Test Reqd. for the below min design temperature  
 for Matl. Code SS (-)196° c, for Matl. Code LTCS, LD & DU (-)46°c.

**4.3 WELDED LINE GUIDE , 50-1200mm / 2"-48"**
**LG-003**


TYPICAL PART NUMBER	AVAILABLE MATERIAL SHORT CODE	STD DETAIL TEMPERATURE LIMITATION	
		MAX. DESIGN TEMP	MIN. DESIGN TEMP.
T-LG-003-000A-SS	SS	350°C	-196°C (-105°C) (Refer Note)
T-LG-003-000A-CS	CS	350°C	-20°C
T-LG-003-000A-LCS	LCS	350°C	-46°C
T-LG-003-000A-LD	LD	350°C	-46°C
T-LG-003-000A-DU	DU	100°C (Operating)	-46°C

TYPE	LINE SIZE	DESCRIPTION	QTY	MAX. LOADS Fc (KN)		SUPPORT FUNCTION	WEIGHTS (in kg)	
				CS	SS		CS	SS
T-LG-003-000A	DN 50 - DN 1200 mm / 2" - 48"	L60x60x10	2	80	47	RS, LG	0.92	0.94

All Welds to be a = 0.7 x WT, but max 4 mm CFW.  
 Guide to be Site located and welded.  
 Guide to be fabricated from 10mm thick plate or alternatively cut from L 100 x 10.  
 Impact Test Req'd. for the below min design temperature  
 for Matl. Code SS (-196° c, for Matl. Code LTCS, LD & DU (-46°c.

**4.4 WELDED LINE GUIDE / HOLD DOWN**
**LG-004**


TYPICAL PART NUMBER	AVAILABLE MATERIAL SHORT CODE	STD DETAIL TEMPERATURE LIMITATION	
		MAX. DESIGN TEMP	MIN. DESIGN TEMP.
T-LG-004-000A-SS	SS	350°C	-196°C (-105°C) (Refer Note)
T-LG-004-000A-CS	CS	350°C	-20°C
T-LG-004-000A-LD	LD	350°C	-46°C
T-LG-004-000A-LCS	LCS	350°C	-46°C
T-LG-004-000A-DU	DU	100°C (Operating)	-46°C

TYPE	PLATE OR SHOE BASE PLATE THK	A	B	C	D	E	F	MAXIMUM LOADS kN						WEIGHTS (in kg)	
								CS		SS		LD		CS	SS
								Fc	Fv	Fc	Fv	Fc	Fv		
T-LG-004-000A	10	10	43	25	30	25	13	31	20	18	12	39	25	0.14	0.15
T-LG-004-000B	15	20	93	40	70	75	18	93	122	55	72	117	149	1.4	1.43
T-LG-004-000C	20	20	93	40	70	75	23	123	108	73	63	155	132	1.85	1.88
T-LG-004-000D	15	15	93	40	50	75	18	xx	xx	31	15	41	50	0.97	0.99
T-LG-004-000E	15	15	43	25	35	25	18	xx	xx	31	5	30	15	0.25	0.26

All Welds to be a = 0.7 x WT, but max 4 mm CFW.

Guide to be site located and welded.

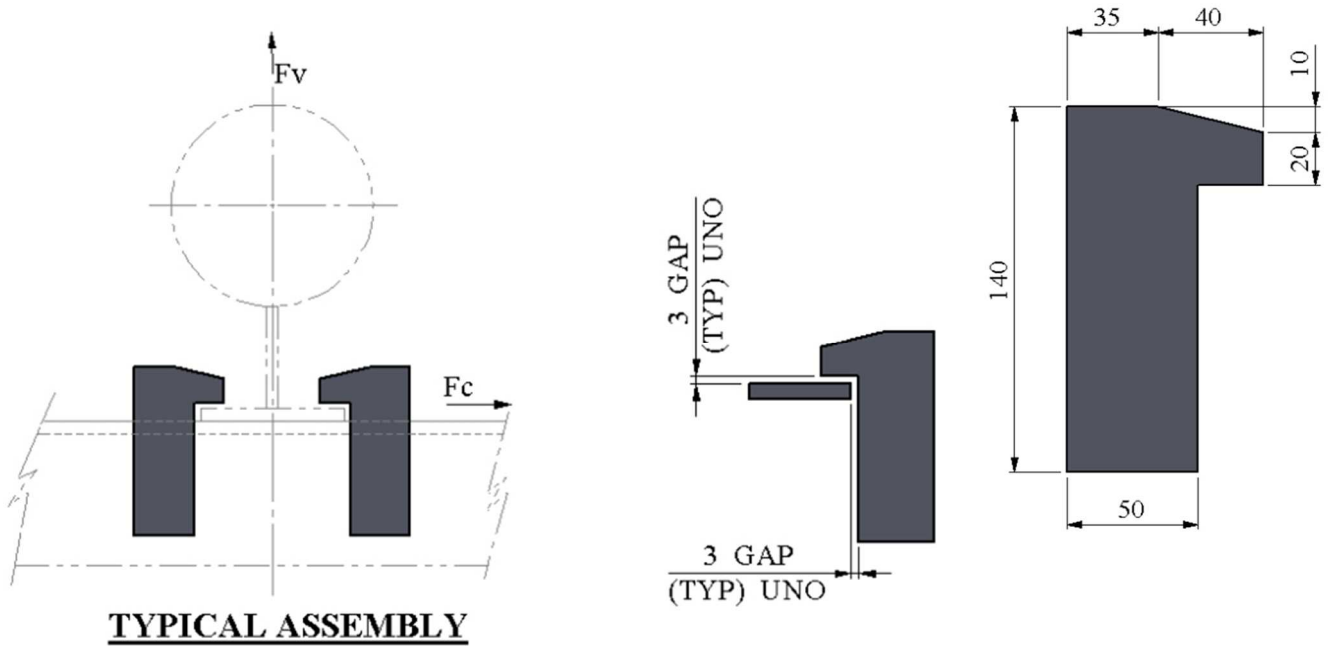
Fv Loads are the total loads for the pair of Hold-Downs.

Fc value (Material) to be used is weakest material of Line Guide and used Shoe / Trunn. bottom plate.

For ALS (Blast) with Lean Duplex (LD) material a maximum load factor of 1.35 can be used.

Impact Test Req'd. for the below min design temperature

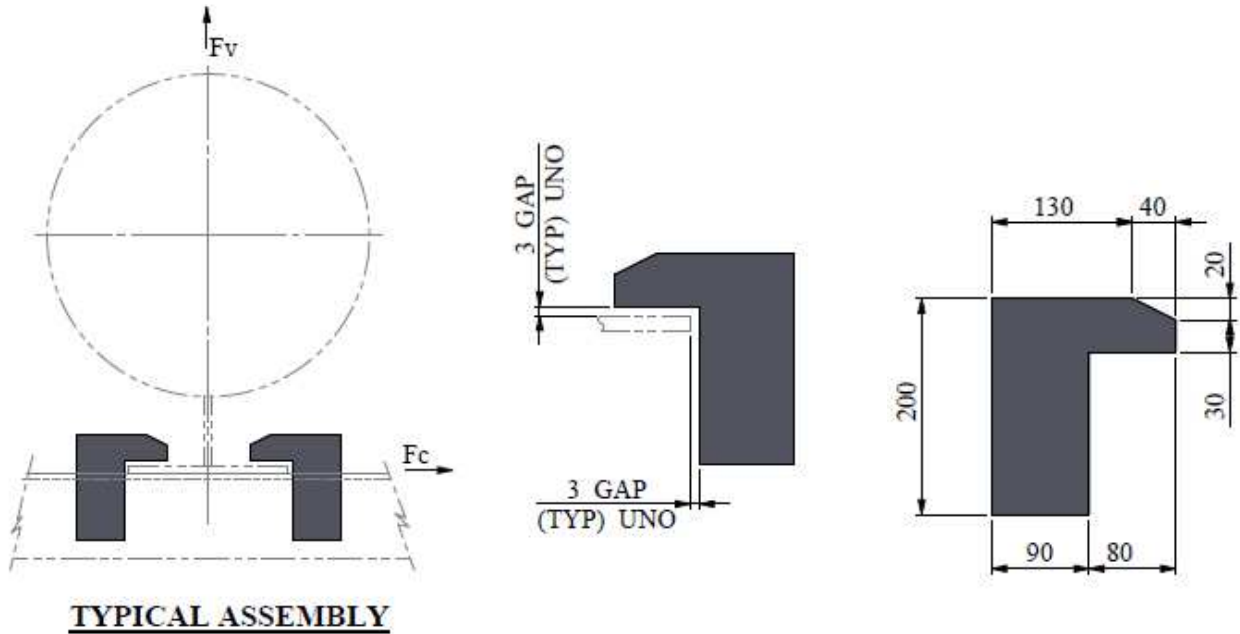
for Matl. Code SS (-196° c, for Matl. Code LTCS, LD & DU (-46°c.

**4.5 WELDED LINE GUIDE / HOLD DOWN**
**LG-005**


TYPICAL PART NUMBER	AVAILABLE MATERIAL SHORT CODE	STD DETAIL TEMPERATURE LIMITATION	
		MAX. DESIGN TEMP	MIN. DESIGN TEMP.
T-LG-005-000A-SS	SS	350°C	-196°C (-105°C) ( Refer Note)
T-LG-005-000A-CS	CS	350°C	-20°C
T-LG-005-000A-LD	LD	350°C	-46°C
T-LG-005-000A-LCS	LCS	350°C	-46°C
T-LG-005-000A-DU	DU	100°C (Operating)	-46°C

TYPE	SECTION	MAXIMUM LOADS (kN)						WEIGHTS (in kg)	
		LD		CS		SS		CS	SS
		Fc	Fv	Fc	Fv	Fc	Fv		
T-LG-005-000A	PLATE 10mm	39	38	31	30	18	17	0.46	0.47

All Welds to be a = 0.7 x WT, but max 4 mm CFW.  
 Guide to be Site located and welded.  
 Fv Loads are the total loads for the pair of Hold-Downs.  
 Maximum load material value to be used is weakest material of Line Guide and used Shoe / Trunn. bottom plate.  
 For ALS (Blast) with Lean Duplex (LD) material a maximum load factor Of 1.35 can be used.  
 Impact Test Req'd. for the below min design temperature  
 for Matl. Code SS (-)196° c, for Matl. Code LTCS, LD & DU (-)46°c.

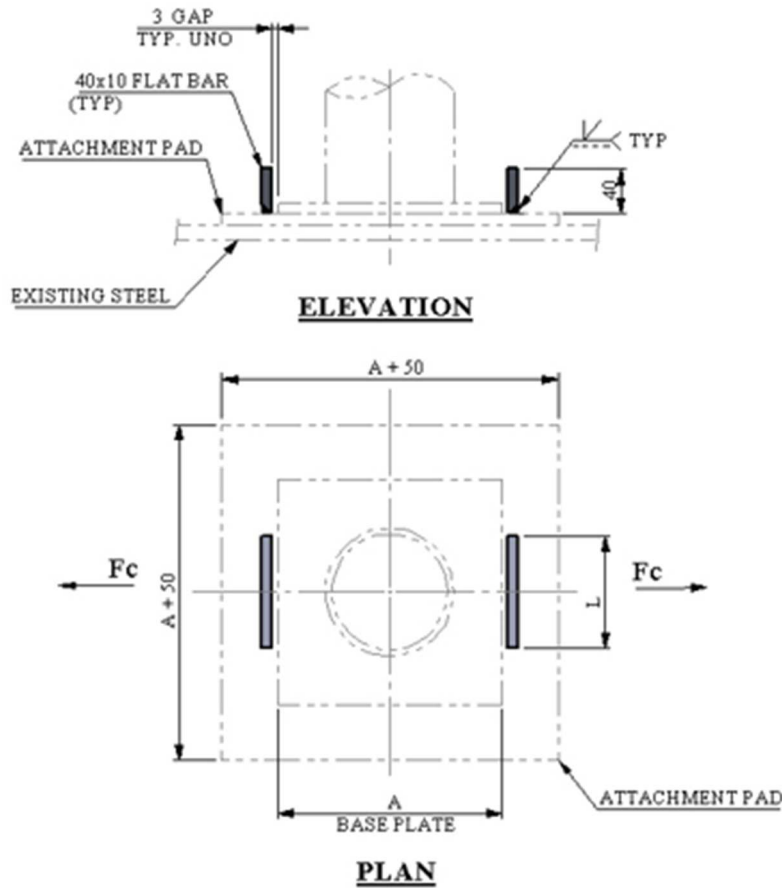
**4.6 WELDED LINE GUIDE / HOLD DOWN (HEAVY DUTY)**
**LG-006**


TYPICAL PART NUMBER	AVAILABLE MATERIAL SHORT CODE	STD DETAIL TEMPERATURE LIMITATION	
		MAX. DESIGN TEMP	MIN. DESIGN TEMP.
T-LG-006-000A-SS	SS	350°c	-196°c (-105°c) ( Refer Note)
T-LG-006-000A-CS	CS	350°c	- 20°c
T-LG-006-000A-LD	LD	350°c	- 46°c
T-LG-006-000A-LCS	LCS	350°c	- 46°c
T-LG-006-000A-DU	DU	100°c (Operating)	-46°c

TYPE	SECTION	MAXIMUM LOADS (kN)						WEIGHTS (in kg)	
		LD		CS		SS		CS	SS
		Fc	Fv	Fc	Fv	Fc	Fv		
T-LG-006-000A	PLATE 20mm	78	107	62	85	36	50	6.8	6.9

All Welds to be a = 0.7 x WT, but max 4 mm CFW.  
 Guide to be Site Located and Welded.  
 Fv Loads are the Total Loads for the Pair of Hold-Downs.  
 Maximum Load Material Value to be used is Weakest Material of Line Guide and Used Shoe / Trunn. Bottom Plate.  
 For ALS (Blast) with Lean Duplex (LD) material a maximum Load Factor of 1.35 can be used.  
 Impact Test Req'd. for the below min design temperature  
 for Matl. Code SS (-)196° c, for Matl. Code LTCS, LD & DU (-)46°c.

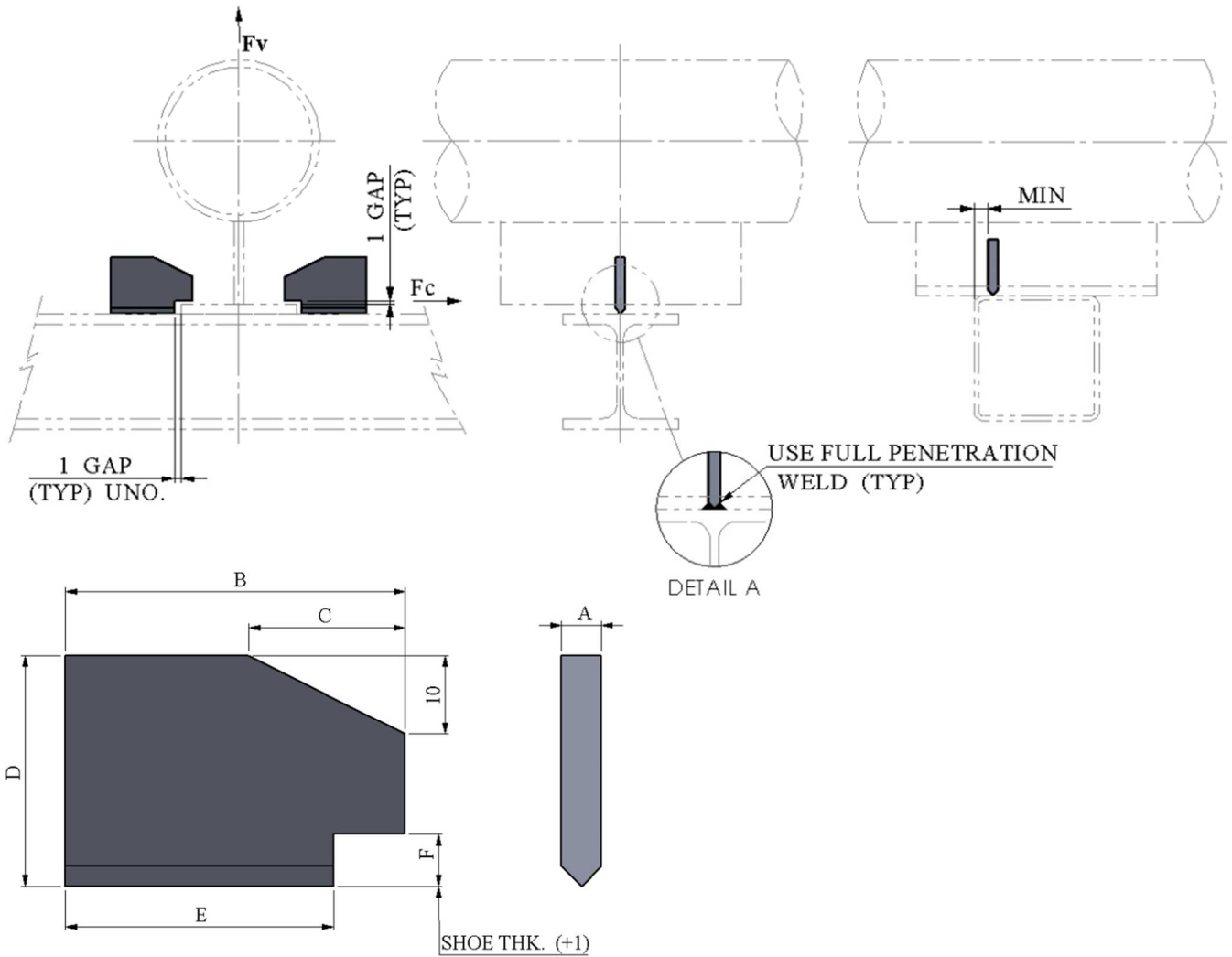


**4.7 GUIDE FOR POST BASE PLATES**
**LG-007**


TYPICAL PART NUMBER	AVAILABLE MATERIAL SHORT CODE	STD DETAIL TEMPERATURE LIMITATION	
		MAX. DESIGN TEMP	MIN. DESIGN TEMP.
T-LG-007-000A-SS	SS	350°c	-196°c (-105°c) ( Refer Note)
T-LG-007-000A-CS	CS	350°c	-20°c
T-LG-007-000A-LD	LD	350°c	-46°c
T-LG-007-000A-LCS	LCS	350°c	-46°c
T-LG-007-000A-DU	DU	100°c (Operating)	-46°c
T-LG-007-000A-AL	AL	N/A	N/A
T-LG-007-000A-TI	TI	350°c	-196°c

TYPE	L	MAXIMUM LOAD Fc (kN)					SUPPORT FUNCTION	WEIGHTS (in kg)			
		CS	SS	LD	AL	Ti		CS	SS	AL	Ti
T-LG-007-000A	50	45	26.5	57	12.6	34.7	RS, LG (SEE NOTE)	0.31	0.32	0.11	0.18
T-LG-007-000B	100	90	53	114	25	69.3	RS, LG (SEE NOTE)	0.63	0.64	0.22	0.35
T-LG-007-000C	150	135	79.6	171	37.8	104	RS, LG (SEE NOTE)	0.94	0.96	0.33	0.53

Detail Only to be Used on Rest and Guide Combination. Lift Off not Allowed.  
 For ALS (Blast) with Lean Duplex (LD) material a maximum Load Factor of 1.35 can be Used.  
 Impact Test Req'd. for the below min design temperature  
 for Matl. Code SS (-)196° c, for Matl. Code LTCS, LD & DU (-)46°c.

**4.8 WELDED LINE GUIDE / HOLD DOWN 1mm GAP**
**LG-008**


TYPICAL PART NUMBER	AVAILABLE MATERIAL SHORT CODE	STD DETAIL TEMPERATURE LIMITATION	
		MAX. DESIGN TEMP	MIN. DESIGN TEMP.
T-LG-008-000A-SS	SS	350°C	-196°C (-105°C) ( Refer Note)
T-LG-008-000A-CS	CS	350°C	-20°C
T-LG-008-000A-LD	LD	350°C	-46°C
T-LG-008-000A-LCS	LCS	350°C	-46°C
T-LG-008-000A-DU	DU	100°C (Operating)	-46°C

TYPE	PLATE OR SHOE BASE PLATE THK	A	B	C	D	E	F	MAXIMUM LOADS (kN)						WEIGHTS (in kg)	
								CS		SS		LD		CS	SS
								Fc	Fv	Fc	Fv	Fc	Fv		
T-LG-008-000A	10	10	43	25	30	25	11	31	20	18	12	39	25	0.15	0.16
T-LG-008-000B	15	20	93	40	70	75	16	93	122	55	72	117	149	1.4	1.43
T-LG-008-000C	20	20	93	40	70	75	21	123	108	73	63	155	132	1.9	1.94

All Welds to be a = 0.7 x WT, but max 4 mm CFW.  
 Guide to be Site Located and Welded.  
 Fv Loads are the Total Loads for the Pair of Hold-Downs.  
 Impact Test Req'd. for the below min design temperature  
 for Matl. Code SS (-196° c, for Matl. Code LTCS, LD & DU (-46°c.