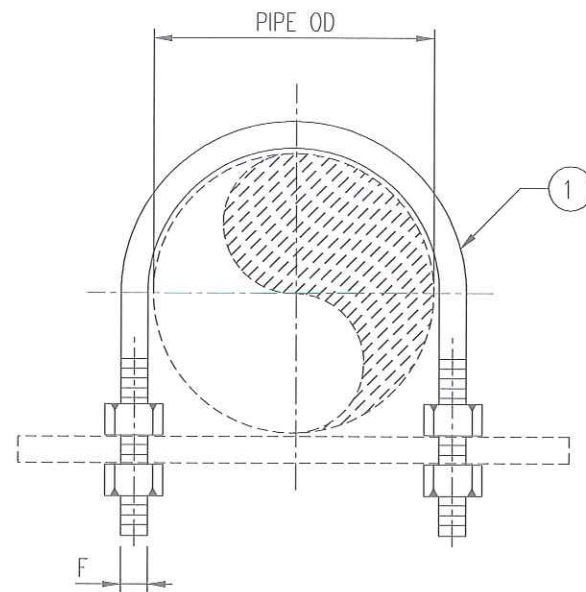


074-0000-220-000-290 01

MicroStation

CADD DRAWING NO MANUAL CHANGES

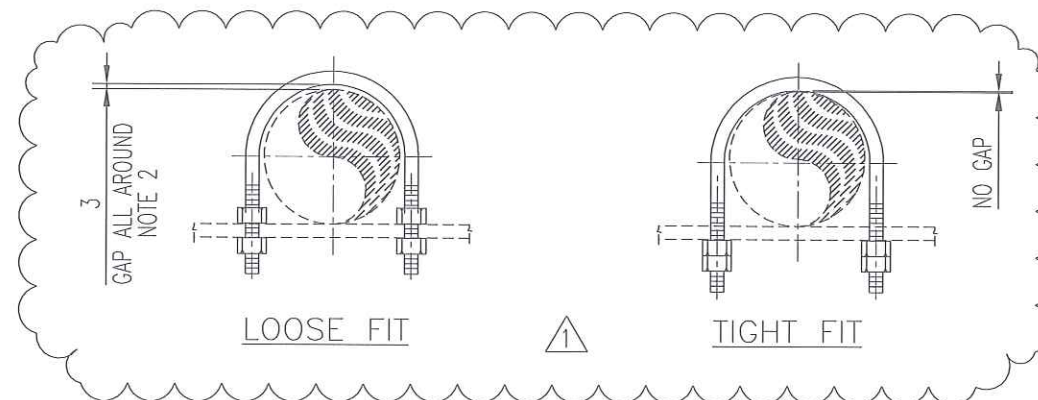


NPS	U-BOLT ROD DIA F mm	CAPACITY IN kN NOTE 3	WEIGHT kg
1/2	6	2.5	0.05
3/4	6	2.5	0.05
1	6	2.5	0.055
1 1/2	9.5	6.5	0.14
2	9.5	6.5	0.15
3	9.5	12	0.36
4	13	12	0.41
6	16	19	0.91
8	16	19	1.05
10	19	28.5	2.22
12	22	44	3.51
14	22	44	3.77
16	22	44	4.18
18	25.4	52	6.13
20	25.4	52	6.63
24	25.4	52	7.67

ITEM	DESCRIPTION	QTY
1	U-BOLT ANVIL FIG 137 GALVANIZED WITH 4 HEX NUTS OR APPROVED EQUAL	1

NOTES:

- GRIP TIGHT 'U' BOLTS (TYPE-T) ARE USED IN VERTICAL PIPING ONLY IN CONJUNCTION WITH SHEAR LUG TYPE LG1 SEE DRAWING 074-0000-220-000-241 01.
- FOR PIPE GUIDES, THE U-BOLT TO BE LEFT LOOSE TYPE L WITH A 3mm MAXIMUM GAP LEFT BETWEEN THE PIPE & THE U-BOLT.
- THE CAPACITY SHOWN ON THE TABLE IS FOR VERTICAL LOAD. WHEN LOADING IS IN COMBINATION OF VERTICAL & HORIZONTAL, STRESS ENGINEER'S REVIEW IS REQUIRED. THIS CAPACITY SHALL BE APPLIED AT 340°C OR LESS. FOR LINES ABOVE 340°C & UP TO 395°C, CAPACITY SHOWN ON THE TABLE WILL DECREASE 22% FOR ALL SIZES EXCEPT NPS 12 TO NPS 16 FOR WHICH CAPACITY WILL DECREASE 30%.



FIT TYPE	
L	LOOSE FIT
T	TIGHT FIT

CALLOUT:
U1-L-12
FIT TYPE — NPS —

IORVL DISC. APPRAISAL	IORVL SUP. APPRAISAL	BY	DATE	REV
<i>[Signature]</i>	<i>[Signature]</i>		2010-Mar-31	1

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IMPERIAL OIL USE ONLY



IMPERIAL OIL RESOURCES

KEARL - ALL AREAS
U - BOLT U1 - CARBON STEEL NPS 1/2 TO NPS 24
DETAILS

CONTRACTOR NAME		CONTRACTOR DWG. NO	
AMEC		0000-132-ST-0290-01	
SCALE	IOR DRAWING NUMBER	REV.	
NTS	074-0000-220-000-290 01	1	



PERMIT TO PRACTICE
AMEC Americas Limited
Signature *[Signature]*
Date *Mar. 29 / 10*
PERMIT NUMBER: P 0621
The Association of Professional Engineers,
Geologists and Geophysicists of Alberta

NO.	DATE	REVISIONS	DRAWN	CHECK	DESIGN	APPR.
1	10 03 08	IFC - REISSUED FOR CONSTRUCTION	HC	SW	HC	SW
0	09 09 10	IFC - ISSUED FOR CONSTRUCTION	HC	FJ	DH	SW

Version: 4

B-STD