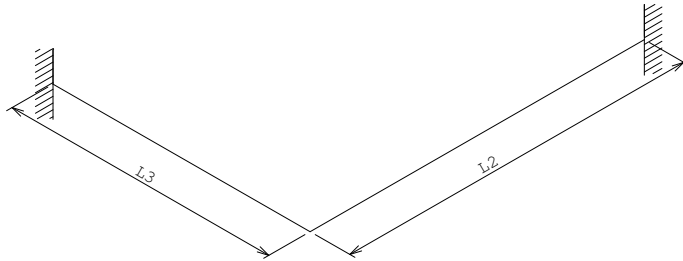


GENERAL NOTES

1.



2 SPANS UNDERLINED ARE LIMITED BY STRESS AND NOT DEFLECTION.
MAXIMUM STRESS = 280 kg/cm²

3 LEGEND

P- PIPE : 3/4" TO 3" SCH.80
PIPE : 4" TO 10" SCH.40
PIPE : 12" TO 30" 3/8" THICK

W/O PIPE & WATER OR
PIPE OIL & LIGHT INSULATION

L: PIPE & LIGHT INSULATION

H: PIPE & HEAVY INSULATION

4 DESIGN LIMITS

SPANS BASED ON CARBON STEEL PIPING ONLY
MAXIMUM OPERATING TEMP 400 °C
MAXIMUM OPERATING PRESSURE 14 kg/cm²

DIA DEFL	KG/MTR	COM	L2	L3	L2	L3	L2	L3	L2	L3	L2	L3	L2	L3	L2	L3	L2&L3
3/4"	2.2	P	3.0	0.8	2.7	1.1	2.4	1.2	2.1	1.3	1.9	1.3	1.7	1.4	1.5	1.4	1.5
	2.5	W/O	3.0	0.6	2.7	1.0	2.5	1.0	2.2	1.2	1.8	1.3	1.6	1.4	1.5	1.4	1.4
3mm	3.5	LI	2.7	0.6	2.5	0.9	2.9	1.0	2.0	1.1	1.7	1.2	1.4	1.2	1.3	1.3	1.3
	5.9	HI	<u>2.3</u>	<u>0.4</u>	<u>2.1</u>	<u>0.7</u>	<u>1.8</u>	<u>0.9</u>	1.7	1.0	1.4	1.1	1.3	1.1	1.2	1.1	1.1
1"	3.2	P	3.5	0.7	3.4	1.0	3.1	1.2	2.8	1.4	2.4	1.5	2.1	1.5	1.9	1.6	1.7
	3.7	W/O	3.4	0.7	3.1	1.1	2.8	1.3	2.5	1.4	2.2	1.4	1.9	1.5	1.7	1.6	1.6
3.5mm	5.0	LI	3.2	0.6	2.8	1.0	2.6	1.2	2.3	1.3	2.1	1.3	1.8	1.4	1.7	1.4	1.5
	9.6	HI	2.4	0.5	2.3	0.8	2.1	1.0	1.9	1.0	1.8	1.1	1.6	1.2	1.4	1.2	1.3

MAXIMUM PIPE SPANS
BASED UPON
DEFLECTION AND STRESS

ID. NO.

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ISSUE

2

SHEET

1 of 3

DOC.NO.

BN-DS-C26

DIA DEFL	KG/MTR	COM	L2	L3	L2	L3	L2	L3	L2	L3	L2	L3	L2	L3	L2	L3	L2&L3
1 1/2"	5.4	P	4.4	0.9	4.1	1.4	3.4	1.7	3.1	1.8	2.7	1.9	2.4	1.9	2.3	2.0	2.1
	6.6	W/O	4.2	0.8	3.9	1.4	3.5	1.6	3.1	1.7	2.8	1.8	2.5	1.8	2.2	1.9	2.0
4mm	7.8	LI	4.0	0.8	3.8	1.2	3.5	1.4	3.1	1.6	2.8	1.7	2.5	1.8	2.1	1.8	1.9
	12.6	HI	<u>3.4</u>	<u>0.8</u>	<u>3.2</u>	<u>1.1</u>	3.0	1.3	2.6	1.4	2.3	1.5	2.1	1.6	1.9	1.6	1.7
2"	7.5	P	5.1	1.3	4.7	1.6	4.2	1.9	3.7	2.1	3.4	2.2	3.0	2.3	2.7	2.3	2.4
	9.4	W/O	4.8	1.0	4.4	1.5	4.0	1.8	3.5	1.9	3.1	2.0	2.8	2.1	2.6	2.2	2.3
4.5mm	10.5	LI	4.6	1.2	4.3	1.5	3.9	1.7	3.4	1.9	3.1	2.0	2.8	2.1	2.5	2.1	2.2
	22.8	HI	<u>3.4</u>	<u>0.8</u>	<u>3.2</u>	<u>1.1</u>	<u>2.8</u>	<u>1.4</u>	<u>2.5</u>	<u>1.5</u>	<u>2.3</u>	<u>1.6</u>	<u>2.1</u>	<u>1.6</u>	<u>1.9</u>	<u>1.7</u>	<u>1.7</u>
3"	15.3	P	6.3	1.6	5.8	2.0	5.2	2.4	4.6	2.5	4.1	2.7	3.7	2.8	3.4	2.9	3.0
	19.5	W/O	5.4	1.9	4.9	2.2	4.6	2.3	4.3	2.4	3.8	2.5	3.5	2.6	3.1	2.7	2.8
4,7mm	19.3	LI	5.9	1.5	5.5	1.9	4.9	2.2	4.4	2.4	3.8	2.5	3.5	2.6	3.2	2.5	2.8
	33.2	HI	<u>4.9</u>	<u>1.0</u>	<u>4.8</u>	<u>1.4</u>	<u>4.4</u>	<u>1.8</u>	<u>4.0</u>	<u>2.0</u>	3.6	2.2	3.1	2.3	2.8	2.4	2.5
4"	16.1	P	7.4	1.9	6.9	2.4	6.2	2.8	5.5	3.0	4.9	3.2	4.4	3.3	4.0	3.4	3.5
	24.3	W/O	6.7	1.7	6.2	2.2	5.6	2.5	4.9	2.7	4.4	2.9	4.0	3.0	3.6	3.1	3.5
5,5mm	20.1	LI	6.9	1.7	6.1	2.5	5.5	2.7	4.9	2.9	4.4	3.0	3.9	3.1	3.6	3.2	3.3
	36.6	HI	<u>5.4</u>	<u>1.6</u>	<u>5.0</u>	<u>2.0</u>	<u>4.6</u>	<u>2.3</u>	<u>4.2</u>	<u>2.5</u>	<u>3.8</u>	<u>2.6</u>	3.4	2.7	3.1	2.8	2.8
6"	28.3	P	9.0	2.3	8.4	2.9	7.6	3.4	6.7	3.7	6.0	3.9	5.2	4.0	4.8	4.1	4.3
	47.0	W/O	7.7	2.3	7.0	2.8	6.3	3.2	5.6	3.4	5.0	3.5	4.4	3.5	4.1	3.7	3.8
5,5mm	37.1	LI	8.4	2.1	7.8	2.7	7.1	3.2	6.2	3.4	5.6	3.6	5.0	3.8	4.5	3.9	4.0
	58.7	HI	7.2	1.4	6.7	2.3	6.3	2.8	5.6	3.1	5.0	3.3	4.5	3.4	4.1	3.4	3.6
8"	42.6	P	10.3	2.6	9.6	3.4	8.7	3.9	7.3	4.4	6.5	4.5	5.8	4.6	5.3	4.8	4.9
	74.8	W/O	<u>8.9</u>	<u>2.2</u>	<u>8.3</u>	<u>2.9</u>	7.5	3.4	6.6	3.6	5.9	3.9	5.3	4.0	4.8	4.1	4.3
5,5mm	53.3	LI	9.4	2.8	8.7	3.5	7.7	3.9	6.9	4.1	6.1	4.3	5.4	4.3	5.0	4.5	4.7
	78.3	HI	<u>8.7</u>	<u>2.2</u>	7.9	3.1	7.0	3.5	6.2	3.7	5.6	3.9	4.9	4.0	4.6	4.1	4.2
10"	60.3	P	11.5	2.9	10.7	3.8	9.7	4.4	8.5	4.7	7.7	4.9	6.9	5.2	6.2	5.3	5.5
	111.2	W/O	<u>9.8</u>	<u>2.0</u>	<u>9.5</u>	<u>2.9</u>	8.3	3.7	7.3	4.0	6.6	4.3	5.9	4.4	5.4	4.6	4.8
5,5mm	73.0	LI	10.7	3.2	9.8	3.9	8.7	4.4	7.7	4.6	6.9	4.8	6.2	4.9	5.7	5.1	5.3
	102.0	HI	9.8	2.9	9.0	3.6	8.0	4.0	7.1	4.3	6.4	4.5	5.6	4.5	5.2	4.7	4.8

MAXIMUM PIPE SPANS
BASED UPON
DEFLECTION AND STRESS

ID. NO.

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ISSUE
2

SHEET
2 of 3

DOC. NO.

BN-DS-C26

DIA DEFL	KG/ MTR	COM	L2	L3	L2	L3	L2	L3	L2	L3	L2	L3	L2	L3	L2	L3	L2&L3
12"	74.0	P	12.80	2.50	11.70	4.10	10.50	4.75	9.25	5.10	8.30	5.40	7.50	5.60	6.70	5.70	6.00
	147.0	W/O	<u>10.30</u>	<u>2.05</u>	<u>9.65</u>	<u>3.40</u>	8.90	4.00	7.85	4.30	7.05	4.55	6.30	4.75	5.75	4.85	5.10
6 mm	88.8	LI	12.25	2.45	11.65	3.50	10.65	4.25	9.60	4.80	8.45	5.05	7.55	5.30	6.50	5.50	5.75
	122.0	HI	<u>11.30</u>	<u>2.25</u>	10.75	3.20	9.85	3.95	8.80	4.40	7.80	4.70	6.95	4.90	6.05	5.10	5.30
14"	81.4	P	13.40	2.70	12.25	4.30	11.05	4.95	9.75	5.35	8.70	5.65	7.85	5.90	6.80	6.35	6.30
	170.4	W/O	<u>10.45</u>	<u>2.60</u>	<u>9.50</u>	<u>3.80</u>	8.70	4.35	7.75	4.65	6.90	4.85	6.10	4.90	5.65	5.10	5.25
6 mm	97.1	LI	12.90	2.60	11.75	4.10	10.60	4.75	9.35	5.15	8.40	5.45	7.50	5.65	6.50	5.85	6.05
	133.2	HI	11.90	2.25	11.30	3.10	10.35	4.15	9.25	4.65	8.20	4.90	7.30	5.10	6.30	5.35	5.55
16"	93.3	P	14.20	3.55	13.15	4.60	11.85	5.35	10.45	5.75	9.40	6.10	8.45	6.30	7.50	6.75	6.75
	220.2	W/O	<u>11.05</u>	<u>1.10</u>	<u>10.90</u>	<u>2.70</u>	<u>10.20</u>	<u>3.55</u>	9.15	4.55	8.15	4.90	6.90	5.15	6.30	5.35	5.50
6 mm	111.9	LI	13.55	3.40	12.55	4.40	11.35	5.10	10.00	5.50	8.95	5.80	8.05	6.05	7.30	6.20	6.45
	150.2	HI	<u>12.60</u>	<u>1.25</u>	11.70	4.10	10.55	4.75	9.30	5.10	8.35	5.45	7.50	5.60	6.50	5.85	6.00
18"	105.2	P	15.33	3.05	13.95	4.90	12.60	5.70	11.10	6.10	9.95	6.50	8.95	6.70	8.10	6.90	7.15
	256.0	W/O	<u>11.20</u>	<u>2.25</u>	<u>10.40</u>	<u>3.65</u>	<u>9.70</u>	<u>4.35</u>	<u>8.85</u>	<u>4.85</u>	8.00	5.20	7.15	5.40	6.50	5.50	5.75
6 mm	131.3	LI	13.80	4.15	12.60	5.05	11.25	5.65	10.00	6.00	8.90	6.25	7.90	6.35	7.35	6.60	6.50
	168.5	HI	12.90	3.90	11.85	4.75	10.55	5.30	9.40	5.65	8.40	5.85	7.45	6.00	6.90	6.25	6.35
20"	117.1	P	16.10	3.20	15.30	4.55	14.00	5.60	12.50	6.25	11.10	6.65	9.95	6.95	8.55	7.25	7.55
	304.8	W/O	<u>11.40</u>	<u>2.25</u>	<u>11.10</u>	<u>3.30</u>	<u>10.25</u>	<u>4.10</u>	<u>9.45</u>	<u>4.70</u>	<u>8.50</u>	<u>5.10</u>	<u>7.70</u>	<u>5.40</u>	<u>6.60</u>	<u>5.60</u>	<u>5.80</u>
6 mm	145.7	LI	15.25	3.05	14.50	4.35	13.25	5.30	11.80	5.90	10.50	6.30	9.40	6.60	8.10	6.85	7.15
	187.4	HI	14.30	2.85	13.65	4.10	12.45	4.00	11.15	5.55	9.95	6.00	8.85	6.20	7.60	6.45	6.75
24"	140.9	P	16.80	5.05	15.35	6.15	13.70	6.85	12.20	7.30	10.95	7.65	9.70	7.75	8.95	8.05	8.30
	413.3	W/O	<u>11.50</u>	<u>3.45</u>	<u>10.60</u>	<u>4.25</u>	<u>9.80</u>	<u>4.90</u>	<u>8.80</u>	<u>5.30</u>	<u>7.90</u>	<u>5.55</u>	<u>7.15</u>	<u>5.70</u>	<u>6.50</u>	<u>5.85</u>	<u>6.05</u>
6 mm	182.1	LI	15.80	4.75	14.40	5.75	12.90	6.45	11.45	6.85	10.25	7.15	9.10	7.30	8.40	7.55	7.75
	225.1	HI	15.10	4.55	13.85	5.55	12.35	6.15	10.95	6.55	9.80	6.85	8.70	7.00	8.10	7.25	7.45
30"	176.8	P	19.50	4.90	15.35	6.35	16.30	7.35	14.40	7.90	12.90	8.40	11.60	8.70	10.05	9.05	9.30
	610.4	W/O	<u>12.15</u>	<u>3.00</u>	<u>11.35</u>	<u>3.95</u>	<u>10.60</u>	<u>4.75</u>	<u>9.65</u>	<u>5.30</u>	<u>8.65</u>	<u>5.60</u>	<u>7.80</u>	<u>5.85</u>	<u>6.75</u>	<u>6.10</u>	<u>6.20</u>
6 mm	228.3	LI	18.30	4.60	16.95	5.90	15.25	6.85	13.50	7.40	12.15	8.00	10.85	8.15	9.40	8.45	8.70
	281.2	HI	17.35	4.35	16.10	5.65	14.55	6.50	12.80	7.05	11.50	7.50	10.60	7.95	8.95	8.05	8.30

MAXIMUM PIPE SPANS
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