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MICROTEC
Rectangular Duct for Flash Dryer - Section 1

DESIGN CALCULATION

ASME Code Version : 2017

Analysis Performed by : SL Client

Job File : D:\2-PAYAM\1-Projects\Microtec Project\13-Microtec -Flash Dryer-5204\5204-Eng

Date of Analysis : Feb 20,2026

PV Elite 2019 , January 2019

Note:

PV Elite performs all calculations internally in U.S. Customary Units to remain compliant with the ASME Code and any built in assumptions in the ASME Code formulae. Finalized results are converted to the user set of selected units using conversion constants with adequate significant digits.

MICROTEC**Rectangular Duct for Flash Dryer - Section 1**

PV Elite 2019 SP1 Licensee: SL Client

FileName : Rectangular Section - 1

Rectves Analysis : Rectangular-6 Item: 1 5:40p Feb 20,2026

Input Echo, COMPONENT 1, Description: Rectangular-6

Figure Number Analyzed A4

Design Internal Pressure P 0.5000 bars
 Design External Pressure Pext 0.1000 bars
 Design Temperature Temp 170.0000 C

VESSEL MATERIAL DATA:
 Material Specification SA-240 316
 Shell Allowable Stress at Design Temp S 136.0672 N./mm²
 Shell Allowable Stress at Ambient SA 137.9000 N./mm²
 Shell Yield Stress at Design Temperature Sy 156.1065 N./mm²

SHORT-SIDE VESSEL DATA:
 Short-side Length Dimension H 1000.0000 mm.
 Minimum Thickness of Short-side Plates t1 3.0000 mm.
 Mid-side Joint Efficiency on Short-side E 1.0000
 Corner Joint Efficiency on Short-side EC 1.0000

LONG-SIDE VESSEL DATA:
 Long-side Length Dimension h 1200.0000 mm.
 Minimum Thickness of Long-side Plates t2 3.0000 mm.
 Mid-side Joint Efficiency on Long-side E 1.0000

REINFORCEMENT MATERIAL DATA:
 Reinforcement Material Specification SA-240 316
 Reinf Allowable Stress at Design Temp Sr 136.0672 N./mm²
 Reinf Allowable Stress at Ambient SA 137.9000 N./mm²
 Reinf Yield Stress at Design Temp Sy 156.1065 N./mm²

C-Factor for Reinforcement (from UG-47) 2.1000
 DELTA (Reinforcement Material Parameter) 485.0000 N./mm²^{0.5}

SHORT-SIDE RECTANGULAR BEAM DATA:
 Outside Distance from Outside of Vessel 50.0000 mm.
 Width of Reinforcing Member 10.0000 mm.

LONG-SIDE RECTANGULAR BEAM DATA:
 Outside Distance from Outside of Vessel 50.0000 mm.
 Width of Reinforcing Member 10.0000 mm.

Rectangular Vessel Results, Item number 1, Desc: Rectangular-6**ASME Code, Section VIII, Division 1, 2017 App. 13****Ligament Efficiency Calculations (Section 13-6, Equations (1)-(6)):****Short-side 1 Calculations**

Membrane Ligament Efficiency [Em]:
 = 1.000

Bending Ligament Efficiency [Eb]:
 = 1.000

Dist from Neutral axis of c/s to inside surface of the vessel [Ci]:
 = t1 - CA / 2
 = 3.000 - 0.000 / 2
 = 1.500 mm.

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Dist from Neutral axis of c/s to extreme outside surface of the section [Co]:

$$\begin{aligned}
 &= -(t_1 - CA) / 2 \\
 &= -(3.000 - 0.000) / 2 \\
 &= -1.500 \text{ mm.}
 \end{aligned}$$

Short-side 2 Calculations

Membrane Ligament Efficiency [Em]:

$$= 1.000$$

Bending Ligament Efficiency [Eb]:

$$= 1.000$$

Dist from Neutral axis of c/s to inside surface of the vessel [Ci]:

$$\begin{aligned}
 &= t_1 - CA / 2 \\
 &= 3.000 - 0.000 / 2 \\
 &= 1.500 \text{ mm.}
 \end{aligned}$$

Dist from Neutral axis of c/s to extreme outside surface of the section [Co]:

$$\begin{aligned}
 &= -(t_1 - CA) / 2 \\
 &= -(3.000 - 0.000) / 2 \\
 &= -1.500 \text{ mm.}
 \end{aligned}$$

Long-side 1 Calculations

Membrane Ligament Efficiency [Em]:

$$= 1.000$$

Bending Ligament Efficiency [Eb]:

$$= 1.000$$

Dist from Neutral axis of c/s to inside surface of the vessel [Ci]:

$$\begin{aligned}
 &= t_1 - CA / 2 \\
 &= 3.000 - 0.000 / 2 \\
 &= 1.500 \text{ mm.}
 \end{aligned}$$

Dist from Neutral axis of c/s to extreme outside surface of the section [Co]:

$$\begin{aligned}
 &= -(t_1 - CA) / 2 \\
 &= -(3.000 - 0.000) / 2 \\
 &= -1.500 \text{ mm.}
 \end{aligned}$$

Long-side 2 Calculations

Membrane Ligament Efficiency [Em]:

$$= 1.000$$

Bending Ligament Efficiency [Eb]:

$$= 1.000$$

Dist from Neutral axis of c/s to inside surface of the vessel [Ci]:

$$\begin{aligned}
 &= t_1 - CA / 2 \\
 &= 3.000 - 0.000 / 2 \\
 &= 1.500 \text{ mm.}
 \end{aligned}$$

Dist from Neutral axis of c/s to extreme outside surface of the section [Co]:

$$\begin{aligned}
 &= -(t_1 - CA) / 2 \\
 &= -(3.000 - 0.000) / 2 \\
 &= -1.500 \text{ mm.}
 \end{aligned}$$

Ligament Efficiency Calculations (Section 13-6, Equations (1)-(6)):

	Em	Eb	Ci	Co
Short-side 1	1.000	1.000	1.500	-1.500

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	2	1.000	1.000	1.500	-1.500
Long-side	1	1.000	1.000	1.500	-1.500
	2	1.000	1.000	1.500	-1.500

Effective Width of Shell Plate (Section 13-8, Eq. (2))

In Compression [w]:

$$= \text{Min}(\text{Min}(t_1, t_2) * \Delta / \sqrt{S_y}, p)$$

$$= \text{Min}(\text{Min}(3.00, 3.00) * 5840.83 / \sqrt{156.11}, 80.00)$$

$$= 80.00 \text{ mm.}$$

In Tension [w]:

$$= 80.00 \text{ mm.}$$

Moment of Inertia of a Strip of the Vessel Wall:

$$\text{Thickness } t_1, I_1 = 0.0000 \text{ cm}^4$$

$$\text{Thickness } t_2, I_2 = 0.0000 \text{ cm}^4$$

Effective Area of Reinforcement on Shell (t * w):

$$\text{Short-side } A_p = 2.4000 \text{ cm}^2$$

$$\text{Long-side } A_p = 2.4000 \text{ cm}^2$$

Moment of Inertia of Effective Area of Reinforcement (w * t3 / 12):**

$$\text{Short-side } I_s = 0.0180 \text{ cm}^4$$

$$\text{Long-side } I_l = 0.0180 \text{ cm}^4$$

Moment of Inertia of Combined Reinforcement and Effective Width:

$$\text{In Compression } I_{l1} = 21.8225 \text{ cm}^4$$

$$I_{t1} = 21.8225 \text{ cm}^4$$

$$\text{In Tension } I_{l1} = 21.8225 \text{ cm}^4$$

$$I_{t1} = 21.8225 \text{ cm}^4$$

Distance from Neutral Axis of Cross Section of Composite Section to the Inside Surface of the Vessel (mm.):

		Ci	Co
Short-side,	in Compression	19.4054	-33.5946
	in Tension	19.4054	-33.5946
Long-side,	in Compression	19.4054	-33.5946
	in Tension	19.4054	-33.5946

Rectangular Vessel Reinforcement Parameters:

$$\text{Alpha1} = H_1 / h_1 = 0.8408$$

$$k(\text{comp}) = (I_{22}/I_{11}) * \text{Alpha1} = 0.8408$$

$$k(\text{tens}) = (I_{22}/I_{11}) * \text{Alpha1} = 0.8408$$

Membrane Stress Calculations per Section 13-8**Membrane Stresses at Short-side 1**

Membrane Stress at Short-side 1 [Sms]:

$$= p * h * p / (2 * (A_1 + p * t_1))$$

$$= 0.50 * 1200.00 * 80.00 / (2 * (500.000 + 80.00 * 3.00))$$

$$= 3.24 \text{ N./mm}^2$$

Membrane Stresses at Short-side 2

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Membrane Stress at Short-side 2 [Sms]:

$$\begin{aligned}
 &= p * h * p / (2 * (A1 + p * t1)) \\
 &= 0.50 * 1200.00 * 80.00 / (2 * (500.000 + 80.00 * 3.00)) \\
 &= 3.24 \text{ N./mm}^2
 \end{aligned}$$

Membrane Stresses at Long-side 1**Membrane Stress at Long-side 1 at A[SmlA]:**

$$\begin{aligned}
 &= p * H * p / (2 * (A2 + p * t2)) \\
 &= 0.50 * 1000.00 * 80.00 / (2 * (5.000 + 80.00 * 3.00)) \\
 &= 2.70 \text{ N./mm}^2
 \end{aligned}$$

Membrane Stresses at Long-side 2**Membrane Stress at Long-side 2 at A[SmlA]:**

$$\begin{aligned}
 &= p * H * p / (2 * (A2 + p * t2)) \\
 &= 0.50 * 1000.00 * 80.00 / (2 * (5.000 + 80.00 * 3.00)) \\
 &= 2.70 \text{ N./mm}^2
 \end{aligned}$$

Membrane Stresses at Corner sections**Membrane Stress at Short side [Smsc]:**

$$\begin{aligned}
 &= p * h * p / (2 * (A1 + p * t1)) \\
 &= 0.50 * 1200.00 * 80.00 / (2 * (5.000 + 80.00 * 3.00)) \\
 &= 3.24 \text{ N./mm}^2
 \end{aligned}$$

Membrane Stress at Long side [Smlc]:

$$\begin{aligned}
 &= p * H * p / (2 * (A2 + p * t2)) \\
 &= 0.50 * 1000.00 * 80.00 / (2 * (5.000 + 80.00 * 3.00)) \\
 &= 2.70 \text{ N./mm}^2
 \end{aligned}$$

MEMBRANE STRESSES: Membrane Stress Calculations per Section 13-8, Equations (3) and (4). (N./mm²) :

STRESS LOCATIONS	Actual	Allowable
Short-side 1	3.24	136.07
Short-side 2	3.24	136.07
Short-side Corner	3.24	136.07
Long-side 1 at A	2.70	136.07
Long-side 2 at A	2.70	136.07
Long-side Corner	2.70	136.07

Bending Stress Calculations per Section 13-8**Bending Stresses at Short-side 1****Bending Stress at Short-side 1 at N Inner[SbsNi]:**

$$\begin{aligned}
 &= P * p * c / (24 * I11) * [-3 * H^2 + 2 * h^2 \\
 &\quad * ((1 + Alpha1^2 * k) / (1 + k))] \\
 &= 0.5 * 80.0 * 19.41 / (24 * 21.8) * [-3 * 1000.00^2 + 2 * 1200.00^2 * \\
 &\quad ((1 + 0.84^2 * 0.84) / (1 + 0.84))] \\
 &= -7.49 \text{ N./mm}^2
 \end{aligned}$$

Bending Stress at Short-side 1 at N Outer[SbsNo]:

$$\begin{aligned}
 &= P * p * c / (24 * I11) * [-3 * H^2 + 2 * h^2 \\
 &\quad * ((1 + Alpha1^2 * k) / (1 + k))] \\
 &= 0.5 * 80.0 * -33.59 / (24 * 21.8) * [-3 * 1000.00^2 + 2 * 1200.00^2 * \\
 &\quad ((1 + 0.84^2 * 0.84) / (1 + 0.84))] \\
 &= 12.97 \text{ N./mm}^2
 \end{aligned}$$

Bending Stress at Short-side 1 at Q Inner[SbsQi]:

$$\begin{aligned}
 &= P * h^2 * p * c / (12 * I11) * \\
 &\quad ((1 + Alpha1^2 * k) / (1 + k)) \\
 &= 0.50 * 1200.00^2 * 80.00 * 19.41 / (12 * 21.82) *
 \end{aligned}$$

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$$((1 + 0.84^2 * 0.84) / (1 + 0.84)) \\ = 36.97 \text{ N./mm}^2$$

Bending Stress at Short-side 1 at Q Outer[SbsQo]:

$$= P * h^2 * p * c / (12 * I_{11}) * \\ ((1 + \text{Alpha}1^2 * k) / (1 + k)) \\ = 0.50 * 1200.00^2 * 80.00 * -33.59 / (12 * 21.82) * \\ ((1 + 0.84^2 * 0.84) / (1 + 0.84)) \\ = -64.00 \text{ N./mm}^2$$

Bending Stresses at Short-side 2

Bending Stress at Short-side 2 at N Inner[SbsNi]:

$$= P * p * c / (24 * I_{11}) * [-3 * H^2 + 2 * h^2] * \\ ((1 + \text{Alpha}1^2 * k) / (1 + k)) \\ = 0.5 * 80.0 * 19.41 / (24 * 21.82) * [-3 * 1000.00^2 + 2 * 1200.00^2 * \\ ((1 + 0.84^2 * 0.84) / (1 + 0.84))] \\ = -7.49 \text{ N./mm}^2$$

Bending Stress at Short-side 2 at N Outer[SbsNo]:

$$= P * p * c / (24 * I_{11}) * [-3 * H^2 + 2 * h^2] * \\ ((1 + \text{Alpha}1^2 * k) / (1 + k)) \\ = 0.5 * 80.0 * -33.59 / (24 * 21.82) * [-3 * 1000.00^2 + 2 * 1200.00^2 * \\ ((1 + 0.84^2 * 0.84) / (1 + 0.84))] \\ = 12.97 \text{ N./mm}^2$$

Bending Stress at Short-side 2 at Q Inner[SbsQi]:

$$= P * h^2 * p * c / (12 * I_{11}) * \\ ((1 + \text{Alpha}1^2 * k) / (1 + k)) \\ = 0.50 * 1200.00^2 * 80.00 * 19.41 / (12 * 21.82) * \\ ((1 + 0.84^2 * 0.84) / (1 + 0.84)) \\ = 36.97 \text{ N./mm}^2$$

Bending Stress at Short-side 2 at Q Outer[SbsQo]:

$$= P * h^2 * p * c / (12 * I_{11}) * \\ ((1 + \text{Alpha}1^2 * k) / (1 + k)) \\ = 0.50 * 1200.00^2 * 80.00 * -33.59 / (12 * 21.82) * \\ ((1 + 0.84^2 * 0.84) / (1 + 0.84)) \\ = -64.00 \text{ N./mm}^2$$

Bending Stresses at Long-side 1

Bending Stress at Long-side 1 at M Inner[SblMi]:

$$= P * h^2 * p * c / (24 * I_{21}) * [-3 + 2 * \\ ((1 + \text{Alpha}1^2 * k) / (1 + k))] \\ = 0.50 * 1200.00^2 * 80.00 * 19.41 / (24 * 21.82) * [-3 + 2 * \\ ((1 + 0.84^2 * 0.84) / (1 + 0.84))] \\ = -27.06 \text{ N./mm}^2$$

Bending Stress at Long-side 1 at M Outer[SblMo]:

$$= P * h^2 * p * c / (24 * I_{21}) * [-3 + 2 * \\ ((1 + \text{Alpha}1^2 * k) / (1 + k))] \\ = 0.50 * 1200.00^2 * 80.00 * -33.59 / (24 * 21.82) * [-3 + 2 * \\ ((1 + 0.84^2 * 0.84) / (1 + 0.84))] \\ = 46.84 \text{ N./mm}^2$$

Bending Stress at Long-side 1 at Q Inner[SblQi]:

$$= P * h^2 * p * c / (12 * I_{21}) * \\ ((1 + \text{Alpha}1^2 * k) / (1 + k)) \\ = 0.50 * 1200.00^2 * 80.00 * 19.41 / (24 * 21.82) * \\ ((1 + 0.84^2 * 0.84) / (1 + 0.84)) \\ = 36.97 \text{ N./mm}^2$$

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Bending Stress at Long-side 1 at Q Outer[SblQo]:

$$\begin{aligned}
 &= P * h^2 * p * c / (12 * I21) * \\
 &\quad ((1 + Alpha1^2 * k) / (1 + k)) \\
 &= 0.50 * 1200.00^2 * 80.00 * -33.59 / (24 * 21.82) * \\
 &\quad ((1 + 0.84^2 * 0.84) / (1 + 0.84))] \\
 &= -64.00 \text{ N./mm}^2
 \end{aligned}$$

Bending Stresses at Long-side 2

Bending Stress at Long-side 2 at M Inner[SblMi]:

$$\begin{aligned}
 &= P * h^2 * p * c / (24 * I21) * [-3 + 2 * \\
 &\quad ((1 + Alpha1^2 * k) / (1 + k))] \\
 &= 0.50 * 1200.00^2 * 80.00 * 19.41 / (24 * 21.82) * [-3 + 2 * \\
 &\quad ((1 + 0.84^2 * 0.84) / (1 + 0.84))] \\
 &= -27.06 \text{ N./mm}^2
 \end{aligned}$$

Bending Stress at Long-side 2 at M Outer[SblMo]:

$$\begin{aligned}
 &= P * h^2 * p * c / (24 * I21) * [-3 + 2 * \\
 &\quad ((1 + Alpha1^2 * k) / (1 + k))] \\
 &= 0.50 * 1200.00^2 * 80.00 * -33.59 / (24 * 21.82) * [-3 + 2 * \\
 &\quad ((1 + 0.84^2 * 0.84) / (1 + 0.84))] \\
 &= 46.84 \text{ N./mm}^2
 \end{aligned}$$

Bending Stress at Long-side 2 at Q Inner[SblQi]:

$$\begin{aligned}
 &= P * h^2 * p * c / (12 * I21) * \\
 &\quad ((1 + Alpha1^2 * k) / (1 + k)) \\
 &= 0.50 * 1200.00^2 * 80.00 * 19.41 / (24 * 21.82) * \\
 &\quad ((1 + 0.84^2 * 0.84) / (1 + 0.84))] \\
 &= 36.97 \text{ N./mm}^2
 \end{aligned}$$

Bending Stress at Long-side 2 at Q Outer[SblQo]:

$$\begin{aligned}
 &= P * h^2 * p * c / (12 * I21) * \\
 &\quad ((1 + Alpha1^2 * k) / (1 + k)) \\
 &= 0.50 * 1200.00^2 * 80.00 * -33.59 / (24 * 21.82) * \\
 &\quad ((1 + 0.84^2 * 0.84) / (1 + 0.84))] \\
 &= -64.00 \text{ N./mm}^2
 \end{aligned}$$

BENDING STRESSES: Bending Stress Calculations per Section 13-8, Equations (5-8). (N./mm²) :

STRESS LOCATIONS	Inner	Outer	Allowable
Short-side 1 at N	-7.49	12.97	104.07
at Q	36.97	-64.00	104.07
Short-side 2 at N	-7.49	12.97	104.07
at Q	36.97	-64.00	104.07
Long-side 1 at M	-27.06	46.84	104.07
at Q	36.97	-64.00	104.07
Long-side 2 at M	-27.06	46.84	104.07
at Q	36.97	-64.00	104.07

Total Stress Calculations per Section 13-8**Total Stresses at Short-side 1**

Total Stress at short side 1 at N inner [STS_Ni]:

$$\begin{aligned}
 &= Sms + SbsNi \\
 &= 3.24 + -7.49 \\
 &= -4.25 \text{ N./mm}^2
 \end{aligned}$$

Total Stress at short side 1 at N outer [STS_No]:

$$\begin{aligned}
 &= Sms + SbsNo \\
 &= 3.24 + 12.97 \\
 &= 16.22 \text{ N./mm}^2
 \end{aligned}$$

MICROTEC**Rectangular Duct for Flash Dryer - Section 1****PV Elite 2019 SP1 Licensee: SL Client****FileName : Rectangular Section - 1****Rectves Analysis : Rectangular-6****Item: 1 5:40p Feb 20,2026****Total Stress at short side 1 at Q inner [STS_Qi]:**

$$\begin{aligned}
 &= S_{msc} + S_{bsQi} \\
 &= 3.24 + 36.97 \\
 &= 40.21 \text{ N./mm}^2
 \end{aligned}$$

Total Stress at short side 1 at Q outer [STS_Qo]:

$$\begin{aligned}
 &= S_{msc} + S_{bsQo} \\
 &= 3.24 + -64.00 \\
 &= -60.76 \text{ N./mm}^2
 \end{aligned}$$

Total Stresses at Short-side 2**Total Stress at short side 2 at N inner [STS_Ni]:**

$$\begin{aligned}
 &= S_{ms} + S_{bsNi} \\
 &= 3.24 + -7.49 \\
 &= -4.25 \text{ N./mm}^2
 \end{aligned}$$

Total Stress at short side 2 at N outer [STS_No]:

$$\begin{aligned}
 &= S_{ms} + S_{bsNo} \\
 &= 3.24 + 12.97 \\
 &= 16.22 \text{ N./mm}^2
 \end{aligned}$$

Total Stress at short side 2 at Q inner [STS_Qi]:

$$\begin{aligned}
 &= S_{msc} + S_{bsQi} \\
 &= 3.24 + 36.97 \\
 &= 40.21 \text{ N./mm}^2
 \end{aligned}$$

Total Stress at short side 2 at Q outer [STS_Qo]:

$$\begin{aligned}
 &= S_{msc} + S_{bsQo} \\
 &= 3.24 + -64.00 \\
 &= -60.76 \text{ N./mm}^2
 \end{aligned}$$

Total Stresses at Long-side 1**Total Stress at long side 1 at M inner [STL_Mi]:**

$$\begin{aligned}
 &= S_{mlA} + S_{blMi} \\
 &= 2.70 + -27.06 \\
 &= -24.35 \text{ N./mm}^2
 \end{aligned}$$

Total Stress at long side 1 at M outer [STL_Mo]:

$$\begin{aligned}
 &= S_{mlA} + S_{blMo} \\
 &= 2.70 + 46.84 \\
 &= 49.55 \text{ N./mm}^2
 \end{aligned}$$

Total Stress at long side 1 at Q inner [STL_Qi]:

$$\begin{aligned}
 &= S_{mlc} + S_{blQi} \\
 &= 2.70 + 36.97 \\
 &= 39.67 \text{ N./mm}^2
 \end{aligned}$$

Total Stress at long side 1 at Q outer [STL_Qo]:

$$\begin{aligned}
 &= S_{mlc} + S_{blQo} \\
 &= 2.70 + -64.00 \\
 &= -61.30 \text{ N./mm}^2
 \end{aligned}$$

Total Stresses at Long-side 2**Total Stress at long side 2 at M inner [STL_Mi]:**

$$\begin{aligned}
 &= S_{mlA} + S_{blMi} \\
 &= 2.70 + -27.06 \\
 &= -24.35 \text{ N./mm}^2
 \end{aligned}$$

Total Stress at long side 2 at M outer [STL_Mo]:

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$$\begin{aligned}
 &= SmlA + SblMo \\
 &= 2.70 + 46.84 \\
 &= 49.55 \text{ N./mm}^2
 \end{aligned}$$

Total Stress at long side 2 at Q inner [STL_Qi]:

$$\begin{aligned}
 &= Smlc + SblQi \\
 &= 2.70 + 36.97 \\
 &= 39.67 \text{ N./mm}^2
 \end{aligned}$$

Total Stress at long side 2 at Q outer [STL_Qo]:

$$\begin{aligned}
 &= Smlc + SblQo \\
 &= 2.70 + -64.00 \\
 &= -61.30 \text{ N./mm}^2
 \end{aligned}$$

**TOTAL STRESSES: Total Stress Calculations per Section 13-8,
Equations (9-12). (N./mm²) :**

STRESS LOCATIONS	Inner	Outer	Allowable
Short-side 1 at N	-4.25	16.22	104.07
at Q	40.21	-60.76	104.07
Short-side 2 at N	-4.25	16.22	104.07
at Q	40.21	-60.76	104.07
Long-side 1 at M	-24.35	49.55	104.07
at Q	39.67	-61.30	104.07
Long-side 2 at M	-24.35	49.55	104.07
at Q	39.67	-61.30	104.07

SUMMARY OF RESULTS:**MEMBRANE STRESS SUMMARY,**

High Stress (Highest % of Allowable)	3.24	N./mm ²
High Stress Percentage	2.38	%
M.A.W.P. for Membrane Stresses	20.98	bars

BENDING STRESS SUMMARY,

High Stress (Highest % of Allowable)	-64.00	N./mm ²
High Stress Percentage	61.50	%
M.A.W.P. for Bending Stresses	0.81	bars

TOTAL STRESS SUMMARY,

High Stress (Highest % of Allowable)	-61.30	N./mm ²
High Stress Percentage	58.90	%
M.A.W.P. for Total Stresses	0.85	bars

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Vessel Results Summary

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Rectangular Vessel Results For Item 1 : A4**SUMMARY OF RESULTS:****MEMBRANE STRESS SUMMARY,**

High Stress (Highest % of Allowable)	3.24	N./mm ²
High Stress Percentage	2.38	%
M.A.W.P. for Membrane Stresses	20.98	bars

BENDING STRESS SUMMARY,

High Stress (Highest % of Allowable)	-64.00	N./mm ²
High Stress Percentage	61.50	%
M.A.W.P. for Bending Stresses	0.81	bars

TOTAL STRESS SUMMARY,

High Stress (Highest % of Allowable)	-61.30	N./mm ²
High Stress Percentage	58.90	%
M.A.W.P. for Total Stresses	0.85	bars

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