Project Name	:	Doc. No.	:
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Weight Summary

Component	Weight (kg) Contributed by Vessel Elements						
	Metal New*	Metal Corroded*	Insulation & Supports	Lining	Piping	Operating Liquid	Test Liquid
Top Head	291.18	220.20	37.08	0.00	5.93	0.00	642.27
Cylinder (1)	8,403.31	6,615.22	684.10	0.00	2,271.89	1,596.76	30,888.14
Cylinder (2)	11,866.02	10,461.72	545.66	0.00	1,778.39	8,806.26	24,170.29
Cylinder (3)	3,550.04	3,200.97	132.26	0.00	438.67	4,112.85	5,949.99
Bottom Head	638.93	567.17	38.01	0.00	702.46	445.63	642.59
Top Support Skirt	6,371.69	6,371.69	0.00	7,695.20	0.00	0.00	0.00
Skirt Base Ring	1,106.77	1,106.77	0.00	0.00	0.00	0.00	0.00
TOTAL:	32,227.93	28,543.73	1,437.12	7,695.20	5,197.33	14,961.50	62,293.28

* Shells with attached nozzles have weight reduced by material cut out for opening.

Component	Weight (kg) Contributed by Attachments								
	Body Flanges		Nozzles & Flanges		Packed Beds	Ladders & Platforms	Trays & Supports	Rings & Clips	Vertical Loads
	New	Corroded	New	Corroded					
Top Head	0.00	0.00	122.12	109.47	0.00	1,698.58	0.00	0.00	962.00*
Cylinder (1)	0.00	0.00	1,646.43	1,605.64	0.00	6,342.29	3,210.19	51.03	894.00
Cylinder (2)	0.00	0.00	847.32	812.94	0.00	3,585.16	977.01	103.35	2,148.00
Cylinder (3)	0.00	0.00	75.27	63.89	0.00	296.00	0.00	0.00	646.00
Bottom Head	0.00	0.00	134.85	120.57	0.00	34.00	0.00	0.00	2,000.00
Top Support Skirt	0.00	0.00	0.00	0.00	0.00	1,291.11	0.00	0.00	0.00
TOTAL:	0.00	0.00	2,826.01	2,712.51	0.00	13,247.13	4,187.20	154.38	6,650.00*

* This number includes vertical loads which are not present in all conditions.

- Vertical Loads : Including the Partition plate, Downcomer and added weights.

Vessel operating weight, Corroded: 84,811 kg
Vessel operating weight, New: 88,584 kg
Vessel empty weight, Corroded: 69,849 kg
Vessel empty weight, New: 73,622 kg
Vessel test weight, New: 135,916 kg

ALSO INDICATE :
- FABRICATION WT.
- ERECTION WT.
- HYDROTEST WT. (FIELD)

Vessel center of gravity location - from datum - lift condition

Vessel Lift Weight, New: 67,505 kg
Center of Gravity: 10,505.50 mm

PROVIDE BREAK-UP OF ALL WEIGHTS AS PER SAMPLE ATTACHED.

Vessel Capacity

Vessel Capacity** (New): 62,135 liters
Vessel Capacity** (Corroded): 62,610 liters
**The vessel capacity does not include volume of nozzle, piping or other attachments.

SAMPLE WEIGHT BREAK UP

WEIGHT SUMMARY

ITEM NO

WEIGHT ANALYSIS 1

NO	PART NAME		SECTION NO. 1 TOP	SECTION NO. 2 SHELL	SECTION NO. 3 BOT	TOTA
(A)	**MAJOR VESSEL BODY WEIGHT**					
A1	SHELL SECTION	Y	0	492,900	0	492,90
A2	2:1 SEMI-ELLIPSOIDAL HEAD	Y	23,757	0	24,178	47,935
(B)	**SUPPORT WEIGHT**					
B1	STRAIGHT SKIRT/BASE BLOCK	Y	0	0	75,134	75,134
(C)	**NOZZLE WEIGHT**					
C1	NOZZLES & MANHOLE	Y	2,535	9,151	1,524	13,210
(D)	**EXTERNAL NON-REMOVABLE PARTS**					
D1	PLATFORM & LADDER CLIPS	Y	1,422	3,994	685	6,102
D2	INSULATION RING SUPPORT	Y	188	2,992	188	3,368
D3	FIRE-PROOFING SUPPORT	Y	0	0	5	5
D4	PIPE SUPPORT CLIPS	Y	0	10,750	0	10,750
D5	LIFT. LUGS/TAILING LUG	Y	0	7,863	433	8,296
D6	MISC	Y	0	2,000	500	2,500
D7	STIFFENER RING	Y	0	1,235	0	1,235
(E)	**INTERNAL NON-REMOVABLE PARTS**					
E1	ANTI SWIRL BAFFLE (AT NOZZLE F)	Y	0	0	450	450
E2	SUPPORT TRAY RINGS & BOLTING BARS	Y	0	31,963	0	31,96
E3	INTERNAL PIPE/FLANGE	Y	0	250	0	250
(F)	**EXTERNAL REMOVABLE PARTS**					
F1	PLATFORM & LADDER	Y	5,690	15,976	2,741	24,40
F2	PIPING 150	Y	0	43,000	0	43,00
F3	INSULATION MATERIAL (@ .g/m^3)	Y	839	18,320	839	20,00
F4	FIRE-PROOFING MATERIAL (@ 2400 kg/m^3)	Y	0	0	67,701	67,70
F5	TOP DAVIT	Y	600	0	0	600
(G)	**INTERNAL REMOVABLE PARTS**					
G1	TRAYS	Y	0	121,169	0	121,1
G2	INLET DISTRIBUTOR (NOZZLE H)	Y	0	3,167	0	3,16
G3	DEMISTER	Y	0	1,059	0	1,05
G4	SEAL PAN FOUR FLOW (AT NOZZLE B)	Y	0	5,538	0	5,53
(H)	**LIQUID (OPERATING)**					
H1	HOLD UP IN INT. PARTS +HHLL	Y	0	233,020	33,401	266,4
(I)	**LIQUID (TEST)**					
I1	TEST WATER	Y	67,602	2,954,068	68,056	3,089,
	WEIGHT SUMMARY					
(1)	**FABRICATED WEIGHT**					694,7
(2)	**ERECTED/DRESSED-UP WEIGHT**					860,3
(3)	**EMPTY WEIGHT (FIELD)**					980,7
(4)	**OPERATING WEIGHT (FIELD)**					1,247,
(5)	**TEST WEIGHT (SHOP)**					3,784,

SAMPLE - BREAK-UP OF WEIGHTS

NOTES:

(1) Fabricated weight = Bare weight + Nozzle + Stiffeners + Internals and external non removable parts + Misc + Pipe supports. distributer + Top Davit.

(2) Erected weight / Dressed weight = Fabricated weight + Insulation + Ladders and platform + internal removable parts + trays dressed for site

(3) Empty weight = Erected weight + Fireproofing + Packing + ~~distributors~~ + ~~Dressed piping~~

(4) Operating weight = Empty weight + Liquid level

(5) Shop test weight = Fabricated weight + Full of water

7.	Pad impact test exemption temperature from Fig UCS-66M Curve D = -39.8 °C Fig UCS-66.1M MDMT reduction = 9.5 °C, (coincident ratio = 0.82882) Rated MDMT is governed by UCS-66(b)(2)	UCS-66 governing thickness = 20 mm.
8.	Flange rating governs: Flange rated MDMT = -105 °C Bolts rated MDMT per Fig UCS-66 note (e) = -48 °C	UCS-66(b)(3): Coincident ratio = 0.216358
9.	Nozzle is impact test exempt to -105 °C per UCS-66(b)(3) (coincident ratio = 0.05074).	
10.	Nozzle is impact test exempt to -105 °C per UCS-66(b)(3) (coincident ratio = 0.15782).	
11.	Flange rating governs: Flange rated MDMT = -105 °C Bolts rated MDMT per Fig UCS-66 note (e) = -48 °C	UCS-66(b)(3): Coincident ratio = 0.221284
12.	Nozzle is impact test exempt to -105 °C per UCS-66(b)(3) (coincident ratio = 0.05192).	
13.	Pad impact test exemption temperature from Fig UCS-66M Curve D = -39.8 °C Fig UCS-66.1M MDMT reduction = 8.4 °C, (coincident ratio = 0.84802) Rated MDMT is governed by UCS-66(b)(2)	UCS-66 governing thickness = 20 mm.
14.	Nozzle is impact test exempt to -105 °C per UCS-66(b)(3) (coincident ratio = 0.25244).	
15.	Pad impact test exemption temperature from Fig UCS-66M Curve D = -39.27 °C Fig UCS-66.1M MDMT reduction = 15.2 °C, (coincident ratio = 0.72587) Rated MDMT is governed by UCS-66(b)(2)	UCS-66 governing thickness = 20.4 mm.
16.	Nozzle is impact test exempt to -105 °C per UCS-66(b)(3) (coincident ratio = 0.15896).	
17.	Pad impact test exemption temperature from Fig UCS-66M Curve D = -39.8 °C Fig UCS-66.1M MDMT reduction = 8.4 °C, (coincident ratio = 0.84811) Rated MDMT is governed by UCS-66(b)(2)	UCS-66 governing thickness = 20 mm.
18.	Nozzle is impact test exempt to -105 °C per UCS-66(b)(3) (coincident ratio = 0.22591).	
19.	Pad impact test exemption temperature from Fig UCS-66M Curve D = -39.27 °C Fig UCS-66.1M MDMT reduction = 13.7 °C, (coincident ratio = 0.75405) Rated MDMT is governed by UCS-66(b)(2)	UCS-66 governing thickness = 20.4 mm.
20.	Flange rating governs:	UCS-66(b)(1)(b)
21.	Nozzle is impact test exempt to -105 °C per UCS-66(b)(3) (coincident ratio = 0.24196).	
22.	Pad impact test exemption temperature from Fig UCS-66M Curve D = -39.8 °C Fig UCS-66.1M MDMT reduction = 8.5 °C, (coincident ratio = 0.84632) Rated MDMT is governed by UCS-66(b)(2)	UCS-66 governing thickness = 20 mm.
23.	Nozzle is impact test exempt to -105 °C per UCS-66(b)(3) (coincident ratio = 0.23695).	
24.	Nozzle is impact test exempt to -105 °C per UCS-66(b)(3) (coincident ratio = 0.15439).	

Design notes are available on the Settings Summary page.

'MDMT' X-REDUCTION IS NOT PERMITTED.