Aspen Exchanger Design and Rating Shell & Tube V11 File: D:\08 Linked In\05 Github\DWSim-Repo\..\42 Shell and Tube HEX.EDR

TEMA Sheet

Heat Exchanger Specification Sheet

Printed: 10-07-2024 at 14:14:48

				<u> </u>		Sheet		
1	Company: XYZ Engine	eering Corp						
2	Location: N.A.							
3	Service of Unit: N.A. Our Reference: N.A.							
4	Item No.: N.A. Your Reference: N.A.							
5	Date: 09-07-2024		No.: 12345					
6	Size: 203 - 1828.8		pe: BEM	Horizontal		Connected in	ı: 1 parallel	1 series
7	Surf/unit(eff.) 3.6 m ² Shells/unit 1 Surf/shell(eff.) 3.6 m ²							
8	PERFORMANCE OF ONE UNIT							
9	Fluid allocation				Shell S	Side	Tube Side	
10	Fluid name			Toluene			Benzene	
11	Fluid quantity, Total kg/s			0.5556			0.5556	
12	Vapor (In/Out) kg/s			0 0			0	0
13	Liquid kg/s			0.55	0.5556 0.55		0.5556	0.5556
14	Noncondensable kg/s			0		0	0	0
15								
16	Temperature (In/Out) °C			25 45.75		70	50	
17	Bubble / Dew point °C			1	/ /		93.64 / 93.64	92.34 / 92.34
18	Density Vapor/Liquid kg/m³			/ 8	/ 864.79 / 845.49		/ 825.55	/ 846.72
19	Viscosity	*	mPa-s		/ 0.5543 / 0.444		/ 0.3557	/ 0.4437
20	Molecular wt, Vap			<u> </u>	-		1	1
21	Molecular wt. NC							
22	Specific heat		kJ/(kg-K)	1	1.572	/ 1.662	/ 1.724	/ 1.631
23	Thermal conductivity		W/(m-K)		0.1308	/ 0.1248	/ 0.1276	/ 0.1342
24	Latent heat		kJ/kg	,	0.1000	, 0.1.2.10	, 0.12.0	, 0.10.2
25	Pressure (abs)		bar	2.5	5	2.48807	1.5	1.44606
26	Velocity (Mean/Max)		m/s	2.0	0.05 / 0		0.48	
27	Pressure drop, allow./d	calc	bar	0.2	0.2 0.01193		0.2	0.05394
28	Fouling resistance (mi		m²-K/W	0.2	0.000			00013 Ao based
29	Heat exchanged	18.6	kW		MTD (corrected) 21.47 °C			
\vdash	J , , , , , , , , , , , , , , , , , , ,							
1301								\///m ² _K)
30	Transfer rate, Service	243.5 CONSTRUC	CTION OF ONE S	Dirty	247.2	Cle		W/(m²-K)
31	Transfer rate, Service			HELL				W/(m²-K)
31 32	•	CONSTRUC	Shell Si	de	1	Tube Side		
31 32 33	Design/Vacuum/test pr	ressure bar	Shell Si 3.44738 /	HELL	3.44738 /	Tube Side		
31 32 33 34	Design/Vacuum/test pricesign temperature / N	CONSTRUCTION CONST	Shell Si 3.44738 / 110 /	de	1	Tube Side	Sko	etch
31 32 33 34 35	Design/Vacuum/test pr Design temperature / Number passes per sh	ressure bar MDMT °C	Shell Si 3.44738 / 110 /	de	3.44738 /	Tube Side / / / 4	Sko	etch
31 32 33 34 35 36	Design/Vacuum/test properties of the properties	ressure bar MDMT °C nell mm	Shell Si 3.44738 / 110 / 1 3.18	GHELL de /	3.44738 / 110	Tube Side / / 4 3.18	Sko	
31 32 33 34 35 36 37	Design/Vacuum/test pr Design temperature / I Number passes per sh Corrosion allowance Connections	ressure bar MDMT °C nell mm In mm	Shell Si 3.44738 / 110 / 1 3.18 1 25.4 /	GHELL de /	3.44738 / 110	Tube Side / / / 4 3.18 9.05 / -	Sko	etch
31 32 33 34 35 36 37 38	Design/Vacuum/test properties of the properties	ressure bar MDMT °C nell mm In mm Out	Shell Si 3.44738 / 110 / 1 3.18	de /	3.44738 / 110	Tube Side / / 4 3.18	Sko	etch
31 32 33 34 35 36 37 38 39	Design/Vacuum/test properties of the properties	ressure bar MDMT °C nell mm In mm Out Intermediate	Shell Si 3.44738 / 110 / 1 3.18 1 25.4 / 1 25.4 /	de /	3.44738 / 110 1 1:	Tube Side / / / / 4 3.18 9.05 / - 9.05 / - / -	Sko	etch
31 32 33 34 35 36 37 38 39 40	Design/Vacuum/test properties of the properties	ressure bar MDMT °C nell mm In mm Out Intermediate OD: 19.05 Tks. Aver	Shell Si 3.44738 / 110 / 1 3.18 1 25.4 / 1 25.4 / age 2.11	de /	3.44738 / 110 1 1: 1 1: 1 1:	Tube Side / / / 4 3.18 9.05 / - 9.05 / - 1.8 mm Pito	Sko	Tube pattern:30
31 32 33 34 35 36 37 38 39 40 41	Design/Vacuum/test properties of the properties of the provided HTML Pro	ressure bar MDMT °C nell mm In mm Out Intermediate OD: 19.05 Tks. Aver	Shell Si 3.44738 / 110 / 1 3.18 1 25.4 / 1 25.4 / age 2.11 None	check de / mm Ler	3.44738 / 110 1 1: 1 1: 1 1: 1 1: 1 1: 1 1: 1 1:	Tube Side / / / 4 3.18 9.05 / - 9.05 / - 9.05 / - / / / / / / / / / / / / / / / / / /	Sko	Tube pattern:30
31 32 33 34 35 36 37 38 39 40 41 42	Design/Vacuum/test pr Design temperature / N Number passes per sh Corrosion allowance Connections Size/Rating Nominal Tube #: 34 Tube type: Plain Shell Carbon Steel	ressure bar MDMT °C nell mm In mm Out Intermediate OD: 19.05 Tks. Aver	Shell Si 3.44738 / 110 / 1 3.18 1 25.4 / 1 25.4 / age 2.11	check de / mm Ler	3.44738 / 110 1 1: 1 1: 1 1:	Tube Side / / 4 3.18 9.05 / - 9.05 / - / - 8 mm Pitc #/m Shell cover	h: 23.81 mm Material:Carbon	Tube pattern:30
31 32 33 34 35 36 37 38 39 40 41 42 43	Design/Vacuum/test pi Design temperature / I Number passes per sh Corrosion allowance Connections Size/Rating Nominal Tube #: 34 Tube type: Plain Shell Carbon Steel Channel or bonnet	ressure bar MDMT °C nell mm In mm Out Intermediate OD: 19.05 Tks. Aver Insert: ID 205 Carbon Steel	Shell Si 3.44738 / 110 / 1 3.18 1 25.4 / 1 25.4 / age 2.11 None	check de / mm Ler	3.44738 / 110 1 1: 1 1: 1 1: 1 1: 1 1: 1 1: 1 1:	Tube Side / / 4 3.18 9.05 / - 9.05 / - /8 mm Pitc #/m Shell cover Channel cover	h: 23.81 mm Material:Carbon -	Tube pattern:30
31 32 33 34 35 36 37 38 39 40 41 42 43 44	Design/Vacuum/test pi Design temperature / I Number passes per sh Corrosion allowance Connections Size/Rating Nominal Tube #: 34 Tube type: Plain Shell Carbon Steel Channel or bonnet Tubesheet-stationary	ressure bar MDMT °C nell mm In mm Out Intermediate OD: 19.05 Tks. Aver Insert: ID 205 Carbon Steel Carbon Steel	Shell Si 3.44738 / 110 / 1 3.18 1 25.4 / 1 25.4 / / age 2.11 None OD 219.0	check de / mm Ler	3.44738 / 110 1 1: 1 1: 1 1: 1 1: 1 1: 1 1: 1 1:	Tube Side /	h: 23.81 mm Material:Carbon ng -	Tube pattern:30
31 32 33 34 35 36 37 38 39 40 41 42 43 44 45	Design/Vacuum/test pi Design temperature / I Number passes per sh Corrosion allowance Connections Size/Rating Nominal Tube #: 34 Tube type: Plain Shell Carbon Steel Channel or bonnet Tubesheet-stationary Floating head cover	ressure bar MDMT °C nell mm In mm Out Intermediate OD: 19.05 Tks. Aver Insert: ID 205 Carbon Steel Carbon Steel	Shell Si 3.44738 / 110 / 1 3.18 1 25.4 / 1 25.4 / / age 2.11 None OD 219.0	shell de / - - mm Ler	3.44738 / 110 1 1: 1 1: 1 1: 1 1: 1 1: 1 1: 1 1:	Tube Side / / / 4 3.18 9.05 / - 9.05 / - /8 mm Pitc #/m Shell cover Channel cover Tubesheet-floatin	h: 23.81 mm Material:Carbon otection None	Tube pattern:30
31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46	Design/Vacuum/test pi Design temperature / I Number passes per sh Corrosion allowance Connections Size/Rating Nominal Tube #: 34 Tube type: Plain Shell Carbon Steel Channel or bonnet Tubesheet-stationary Floating head cover Baffle-cross Carbon S	ressure bar MDMT °C nell mm In mm Out Intermediate OD: 19.05 Tks. Aver Insert: ID 205 Carbon Steel Carbon Steel - Steel Type	Shell Si 3.44738 / 110 / 1 3.18 1 25.4 / 1 25.4 / / age 2.11 None OD 219.0	shell de / - - mm Ler	3.44738 / 110 1 1: 1 1: 1 1: 1 1: 1 1: 1 1: 1 1:	Tube Side / / / 4 3.18 9.05 / - 9.05 / - /8 mm Pitc #/m Shell cover Channel cover Tubesheet-floatin	h: 23.81 mm Material:Carbon	Tube pattern:30 Steel
31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47	Design/Vacuum/test pi Design temperature / I Number passes per sh Corrosion allowance Connections Size/Rating Nominal Tube #: 34 Tube type: Plain Shell Carbon Steel Channel or bonnet Tubesheet-stationary Floating head cover Baffle-cross Carbon S Baffle-long -	ressure bar MDMT °C nell mm In mm Out Intermediate OD: 19.05 Tks. Aver Insert: ID 205 Carbon Steel Carbon Steel - Steel Type	Shell Si 3.44738 / 110 / 1 3.18 1 25.4 / 1 25.4 / / age 2.11 None OD 219.0 - Single segme	shell de / - - mm Ler	3.44738 / 110 1 1: 1 1: 1 1: 1 1: 1 1: 1 1: 1 1:	Tube Side / / 4 3.18 9.05 / - 9.05 / - / - 8 mm Pitc #/m Shell cover Channel cover Tubesheet-floatir Impingement pro 43.02 He	h: 23.81 mm Material:Carbon otection None	Tube pattern:30 Steel
31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48	Design/Vacuum/test pi Design temperature / I Number passes per sh Corrosion allowance Connections Size/Rating Nominal Tube #: 34 Tube type: Plain Shell Carbon Steel Channel or bonnet Tubesheet-stationary Floating head cover Baffle-cross Carbon S Baffle-long - Supports-tube	ressure bar MDMT °C nell mm In mm Out Intermediate OD: 19.05 Tks. Aver Insert: ID 205 Carbon Steel Carbon Steel - Steel Type	Shell Si 3.44738 / 110 / 1	check de / mm Ler 08	3.44738 / 110 1 1: 1 1: 1 1: 1 1: 1 1: 1 1: 1 1:	Tube Side / / 4 3.18 9.05 / - 9.05 / - 8 mm Pitc #/m Shell cover Channel cover Tubesheet-floatir Impingement pro 43.02 Hi	h: 23.81 mm Material:Carbon ng - ntection None orizSpacing: c/c 171 Inlet 276.2	Tube pattern:30 Steel .45 mm 3 mm
31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49	Design/Vacuum/test pi Design temperature / I Number passes per sh Corrosion allowance Connections Size/Rating Nominal Tube #: 34 Tube type: Plain Shell Carbon Steel Channel or bonnet Tubesheet-stationary Floating head cover Baffle-cross Carbon S Baffle-long - Supports-tube Bypass seal	ressure bar MDMT °C nell mm In mm Out Intermediate OD: 19.05 Tks. Aver Insert: ID 205 Carbon Steel Carbon Steel - Steel Type	Shell Si 3.44738 / 110 / 1	check de / mm Ler 08	3.44738 / 110 1 1: 1 1: 1 1: 1 1: 1 1: 1 1: 1 1:	Tube Side / / 4 3.18 9.05 / - 9.05 / - 8 mm Pitc #/m Shell cover Channel cover Tubesheet-floatin Impingement pro 43.02 H Type Expanded only	h: 23.81 mm Material:Carbon	Tube pattern:30 Steel .45 mm 3 mm
31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50	Design/Vacuum/test pi Design temperature / I Number passes per sh Corrosion allowance Connections Size/Rating Nominal Tube #: 34 Tube type: Plain Shell Carbon Steel Channel or bonnet Tubesheet-stationary Floating head cover Baffle-cross Carbon S Baffle-long - Supports-tube Bypass seal Expansion joint	ressure bar MDMT °C rell In mm In mm Out Intermediate OD: 19.05 Tks. Aver Insert: ID 205 Carbon Steel Carbon Steel - Steel Type	Shell Si 3.44738 / 110 / 1	ental (3.44738 / 110 1 1: 1 1: 1 1: 1 1: 1 1: 1 1: 1 1:	Tube Side / / 4 3.18 9.05 / - 9.05 / - / - 8 mm Pitc #/m Shell cover Channel cover Tubesheet-floatir Impingement pro 43.02 H Type Expanded online	Material:Carbon	Tube pattern:30 Steel .45 mm 3 mm
31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51	Design/Vacuum/test pi Design temperature / I Number passes per sh Corrosion allowance Connections Size/Rating Nominal Tube #: 34 Tube type: Plain Shell Carbon Steel Channel or bonnet Tubesheet-stationary Floating head cover Baffle-cross Carbon S Baffle-long - Supports-tube Bypass seal Expansion joint RhoV2-Inlet nozzle	ressure bar MDMT °C rell mm In mm Out Intermediate OD: 19.05 Tks. Aver ID 205 Carbon Steel Carbon Steel - Steel Type U-bend	Shell Si 3.44738 / 110 / 1	chettl de / mm Ler 08 ental (ube-tubesh Typ nce 3	3.44738 / 110 1 1: 1 1: 1 1: 1 1: 1 1: Cut(%d) eet joint be None	Tube Side / / 4 3.18 9.05 / - 9.05 / - 8 mm Pitc #/m Shell cover Channel cover Tubesheet-floatin Impingement pro 43.02 H Type Expanded only e Bundle exit	Material:Carbon - ng - ntection None orizSpacing: c/c 171 Inlet 276.2	Tube pattern:30 Steel .45 mm 3 mm
31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52	Design/Vacuum/test pi Design temperature / I Number passes per sh Corrosion allowance Connections Size/Rating Nominal Tube #: 34 Tube type: Plain Shell Carbon Steel Channel or bonnet Tubesheet-stationary Floating head cover Baffle-cross Carbon S Baffle-long - Supports-tube Bypass seal Expansion joint RhoV2-Inlet nozzle Gaskets - Shell side	ressure bar MDMT °C rell mm In mm Out Intermediate OD: 19.05 Tks. Aver Insert: ID 205 Carbon Steel Carbon Steel - Steel Type U-bend - 1148	Shell Si 3.44738 / 110 / 1	ental (3.44738 / 110 1 1: 1 1: 1 1: 1 1: 1 1: Cut(%d) eet joint be None	Tube Side / / 4 3.18 9.05 / - 9.05 / - 8 mm Pitc #/m Shell cover Channel cover Tubesheet-floatin Impingement pro 43.02 H Type Expanded only e Bundle exit	Material:Carbon	Tube pattern:30 Steel .45 mm 3 mm
31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53	Design/Vacuum/test pi Design temperature / I Number passes per sh Corrosion allowance Connections Size/Rating Nominal Tube #: 34 Tube type: Plain Shell Carbon Steel Channel or bonnet Tubesheet-stationary Floating head cover Baffle-cross Carbon S Baffle-long - Supports-tube Bypass seal Expansion joint RhoV2-Inlet nozzle Gaskets - Shell side Floating head	ressure bar MDMT °C rell mm In mm Out Intermediate OD: 19.05 Tks. Aver Insert: ID 205 Carbon Steel Carbon Steel - Steel Type U-bend U-bend I148 - d - d -	Shell Si 3.44738 / 110 / 1	chettl de / mm Ler 08 ental (ube-tubesh Typ nce 3	3.44738 / 110 1 1: 1 1: 1 1: 1 1: 1 1:	Tube Side / / 4 3.18 9.05 / - 9.05 / - 8 mm Pitc #/m Shell cover Channel cover Tubesheet-floatir Impingement pro 43.02 H Type Expanded only e Bundle exit Flat M	h: 23.81 mm Material:Carbon orizSpacing: c/c 171 Inlet 276.2: y (2 grooves)(App.A	Tube pattern:30 Steel .45 mm 3 mm
31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54	Design/Vacuum/test pi Design temperature / I Number passes per sh Corrosion allowance Connections Size/Rating Nominal Tube #: 34 Tube type: Plain Shell Carbon Steel Channel or bonnet Tubesheet-stationary Floating head cover Baffle-cross Carbon S Baffle-long - Supports-tube Bypass seal Expansion joint RhoV2-Inlet nozzle Gaskets - Shell side Floating hea Code requirements	ressure bar MDMT °C reell mm In mm Out Intermediate OD: 19.05 Tks. Aver Insert: ID 205 Carbon Steel Carbon Steel - Steel Type U-bend U-bend I148 - ASME Code Sec V	Shell Si 3.44738 / 110 / 1	chettl de / mm Ler 08 ental (ube-tubesh Typ nce 3	3.44738 / 110 1 1: 1 1: 1 1: 1 1: 1 1: 1 1: 1 1:	Tube Side / / 4 3.18 9.05 / - 9.05 / - 8 mm Pito #/m Shell cover Channel cover Tubesheet-floatin Impingement pro 43.02 H Type Expanded online Bundle exit Flat Mo	h: 23.81 mm Material:Carbon otection None orizSpacing: c/c 171 Inlet 276.2 y (2 grooves)(App.A	Tube pattern:30 Steel .45 mm 3 mm
31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55	Design/Vacuum/test pi Design temperature / I Number passes per sh Corrosion allowance Connections Size/Rating Nominal Tube #: 34 Tube type: Plain Shell Carbon Steel Channel or bonnet Tubesheet-stationary Floating head cover Baffle-cross Carbon S Baffle-long - Supports-tube Bypass seal Expansion joint RhoV2-Inlet nozzle Gaskets - Shell side Floating hea Code requirements Weight/Shell	ressure bar MDMT °C nell mm In mm Out Intermediate OD: 19.05 Tks. Aver Insert: ID 205 Carbon Steel Carbon Steel - Steel Type U-bend U-bend - 1148 - 4 ASME Code Sec V 274.2 Filled v	Shell Si 3.44738 / 110 / 1	ental (ube-tubesh- Typ nnce 3 Tube side	3.44738 / 110 1 1: 1 1: 1 1: 1 1: 1 1:	Tube Side / / 4 3.18 9.05 / - 9.05 / - 8 mm Pitc #/m Shell cover Channel cover Tubesheet-floatir Impingement pro 43.02 H Type Expanded only e Bundle exit Flat M	h: 23.81 mm Material:Carbon orizSpacing: c/c 171 Inlet 276.2: y (2 grooves)(App.A	Tube pattern:30 Steel .45 mm 3 mm
31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56	Design/Vacuum/test pi Design temperature / I Number passes per sh Corrosion allowance Connections Size/Rating Nominal Tube #: 34 Tube type: Plain Shell Carbon Steel Channel or bonnet Tubesheet-stationary Floating head cover Baffle-cross Carbon S Baffle-long - Supports-tube Bypass seal Expansion joint RhoV2-Inlet nozzle Gaskets - Shell side Floating hea Code requirements Weight/Shell	ressure bar MDMT °C reell mm In mm Out Intermediate OD: 19.05 Tks. Aver Insert: ID 205 Carbon Steel Carbon Steel - Steel Type U-bend U-bend I148 - ASME Code Sec V	Shell Si 3.44738 / 110 / 1	ental (ube-tubesh- Typ nnce 3 Tube side	3.44738 / 110 1 1: 1 1: 1 1: 1 1: 1 1: 1 1: 1 1:	Tube Side / / 4 3.18 9.05 / - 9.05 / - 8 mm Pito #/m Shell cover Channel cover Tubesheet-floatin Impingement pro 43.02 H Type Expanded online Bundle exit Flat Mo	h: 23.81 mm Material:Carbon otection None orizSpacing: c/c 171 Inlet 276.2 y (2 grooves)(App.A	Tube pattern:30 Steel .45 mm 3 mm
31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55	Design/Vacuum/test pi Design temperature / I Number passes per sh Corrosion allowance Connections Size/Rating Nominal Tube #: 34 Tube type: Plain Shell Carbon Steel Channel or bonnet Tubesheet-stationary Floating head cover Baffle-cross Carbon S Baffle-long - Supports-tube Bypass seal Expansion joint RhoV2-Inlet nozzle Gaskets - Shell side Floating hea Code requirements Weight/Shell	ressure bar MDMT °C nell mm In mm Out Intermediate OD: 19.05 Tks. Aver Insert: ID 205 Carbon Steel Carbon Steel - Steel Type U-bend U-bend - 1148 - 4 ASME Code Sec V 274.2 Filled v	Shell Si 3.44738 / 110 / 1	ental (ube-tubesh- Typ nnce 3 Tube side	3.44738 / 110 1 1: 1 1: 1 1: 1 1: 1 1: 1 1: 1 1:	Tube Side / / 4 3.18 9.05 / - 9.05 / - 8 mm Pito #/m Shell cover Channel cover Tubesheet-floatin Impingement pro 43.02 H Type Expanded online Bundle exit Flat Mo	h: 23.81 mm Material:Carbon otection None orizSpacing: c/c 171 Inlet 276.2 y (2 grooves)(App.A	Tube pattern:30 Steel .45 mm 3 mm