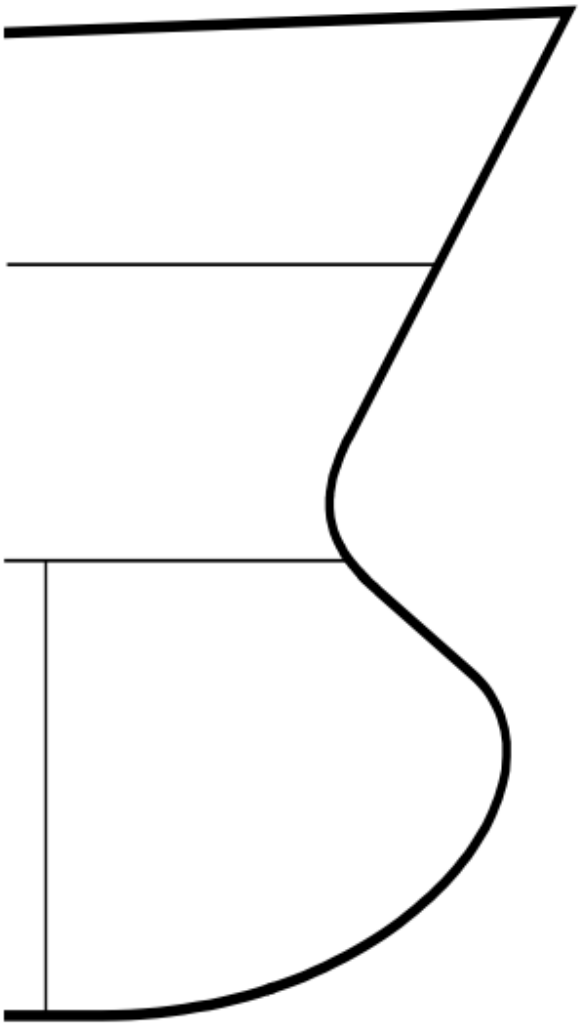
Special Service Craft

Version: 2018.0.0.3

TEG-1451-A- SRV20

Yard: Tess Group
Yard Number: SRV20-001



Lloyd's Register

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Disclaimer

1 Details

1.1 Basic_Data

Property	Units	Entered
Length of the hull, LH	m	21.049
Length Perpendiculars	m	19.720
Summer Waterline Length	m	20.360
Rule Length	m	19.720
Depth	m	2.800
Breadth	m	4.328
Summer Draught	m	1.031
Maximum Speed	knots	16.000
Moulded Displacement Mass	tonnes	60.000
Water Density	kg/m3	1025.000
Moulded Displacement Volume	m3	58.537
Block Coefficient		0.665
Taylor quotient		3.546
Number of Hulls		2
Load Line Length	m	20.060
Sailing Yacht		No

1.2 Additional_Data

Property	Units	Entered
Craft has Chines		Yes
Deadrise Angle	deg	25.000
Support Girth	m	2.060
Side shell deadrise angle at 0.75Lwl	deg	85.000
Bottom deadrise angle at 0.75Lwl	deg	31.000

1.3 Classification

Property	Entered
Craft Type	Catamaran
Service Area	G3
Service Type	Workboat
HSC Compliant	*Yes*

LDC Compliant	*No*
Planing	*Yes*

1.4 Craft

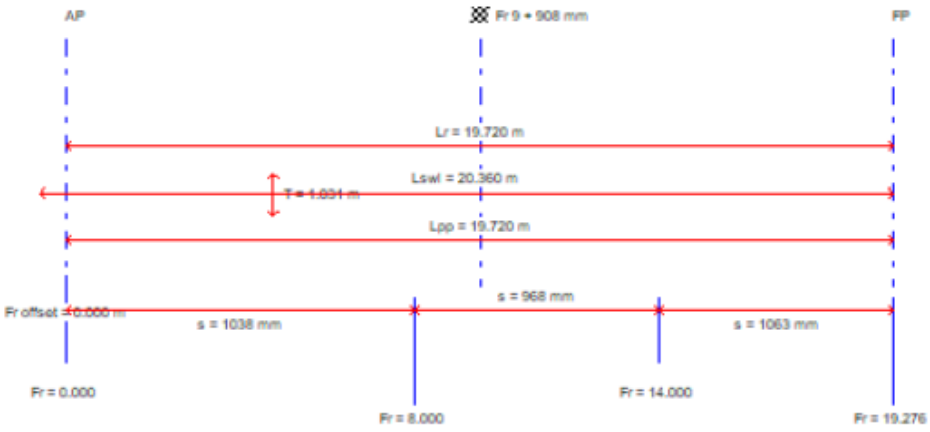
Property	Entered
LR Number	
Project Title	TEG-1451-A- SRV20
Builder	Tess Group
Yard Number	SRV20-001
Hull Material	Composite
Superstructure Material	Composite

1.5 Transverse Framing Regions

Property	Units	Entered
Reverse framing?		0
Location of first frame from AP (Lpp) (aft AP -ve)	m	0.000
First frame number		0.000

Framing System

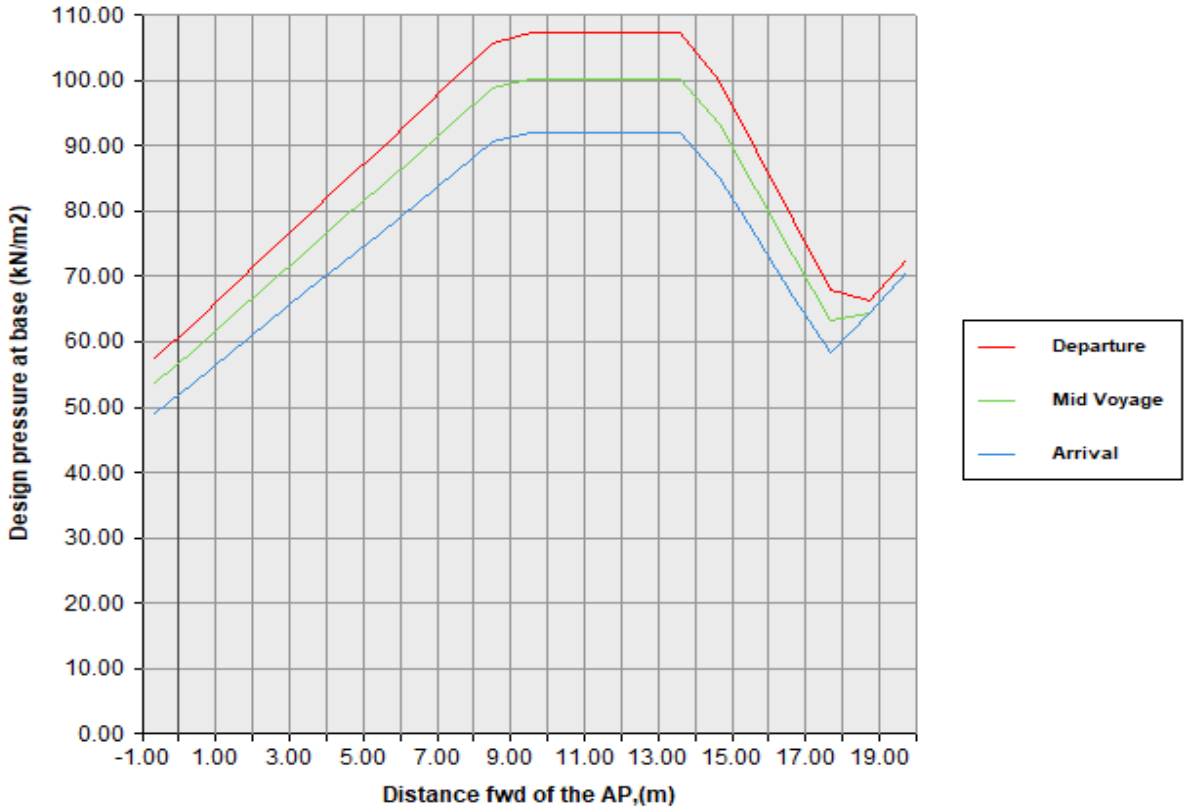
Frame spacing (mm)	Number of frame spacings between floors	Start frame #	End frame #	End Frame Forward of AP (m)	End frame (x/LRule)
1038.000	8.000	*0.000*	8.000	*8.304*	*0.421*
968.000	6.000	*8.000*	14.000	*14.112*	*0.716*
1063.000	6.000	*14.000*	19.276	*19.720*	*1.000*



1.6 Anchoring and Mooring

Anchor and mooring will be done according to MCA Workboat Code 2.

2 Loadings



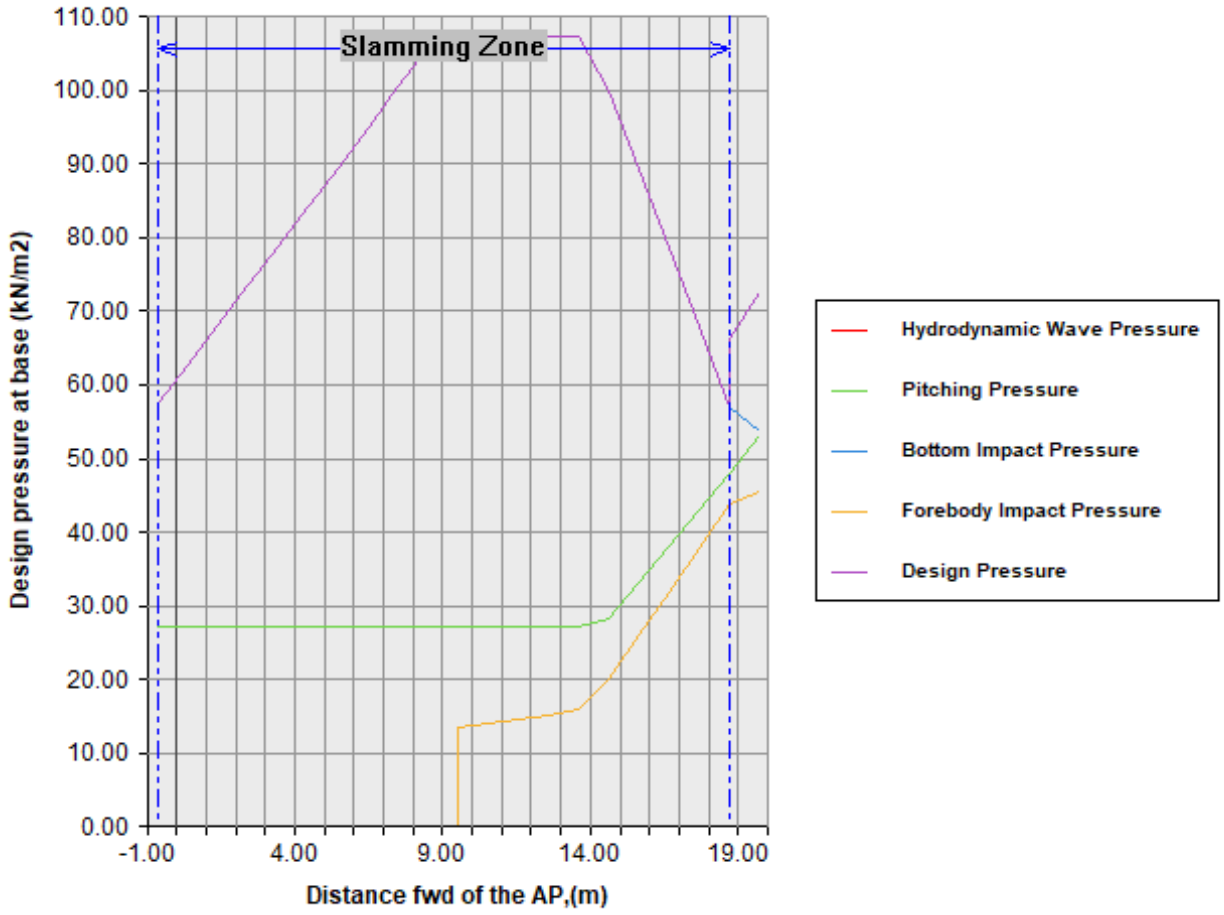
Distance fwd of the AP,(m)	0.000	0.050	0.100	0.150	0.200	0.250	0.300	0.350	0.400	0.450	0.500	0.550
Departure	57.431	62.795	68.160	73.524	78.888	84.253	89.617	94.982	100.346	105.711	107.379	107.379
Mid Voyage	53.657	58.673	63.690	68.706	73.722	78.739	83.755	88.771	93.788	98.804	100.317	100.317
Arrival	49.125	53.723	58.320	62.918	67.515	72.113	76.710	81.308	85.905	90.503	91.837	91.837

Distance fwd of the AP,(m)	0.600	0.650	0.700	0.750	0.800	0.850	0.900	0.950	1.000
Departure	107.379	107.379	107.379	100.030	89.301	78.572	67.843	66.314	72.516
Mid Voyage	100.317	100.317	100.317	93.305	83.272	73.239	63.207	64.375	70.579
Arrival	91.837	91.837	91.837	85.255	76.060	66.865	58.271	64.479	70.687

2.1 Departure

Property	Units	Entered
Basic Data		
Waterline Length	m	20.377
Draught	m	0.868
Displacement Mass	tonnes	60.552
Water Density	kg/m3	1025.000
Displacement Volume	m3	59.075
LCG from AP	m	8.342
Total Breadth of Hulls at LCG	m	4.203
Vertical Acceleration at LCG	g	0.470
Relative Vertical Speed	knots	5.544
Hull Type		Partially Submerged
In Contact with Water		Yes
Waterline Offset from AP	m	-0.710
Block Coefficient, Cb		0.665
Operational Parameters		

Allowable Speed	knots	16.000
Operating Mode		Non-displacement
Froude Number		0.582
Taylor Quotient		3.544
Volumetric Speed Number		14.189
Wave Height		
Significant	m	2.000
Maximum	m	*3.334*
Surviving	m	*2.580*
Additional Data		
Operational Height	m	0.848
Air Gap	m	0.710
Girth Distance	m	2.721



Distance fwd of the AP,(m)	0.000	0.050	0.100	0.150	0.200	0.250	0.300	0.350	0.400
Hydrodynamic Wave Pressure	27.085	27.085	27.085	27.085	27.085	27.085	27.085	27.085	27.085
Pitching Pressure	27.085	27.085	27.085	27.085	27.085	27.085	27.085	27.085	27.085
Bottom Impact Pressure	57.431	62.795	68.160	73.524	78.888	84.253	89.617	94.982	100.346
Forebody Impact Pressure	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Design Pressure	57.431	62.795	68.160	73.524	78.888	84.253	89.617	94.982	100.346

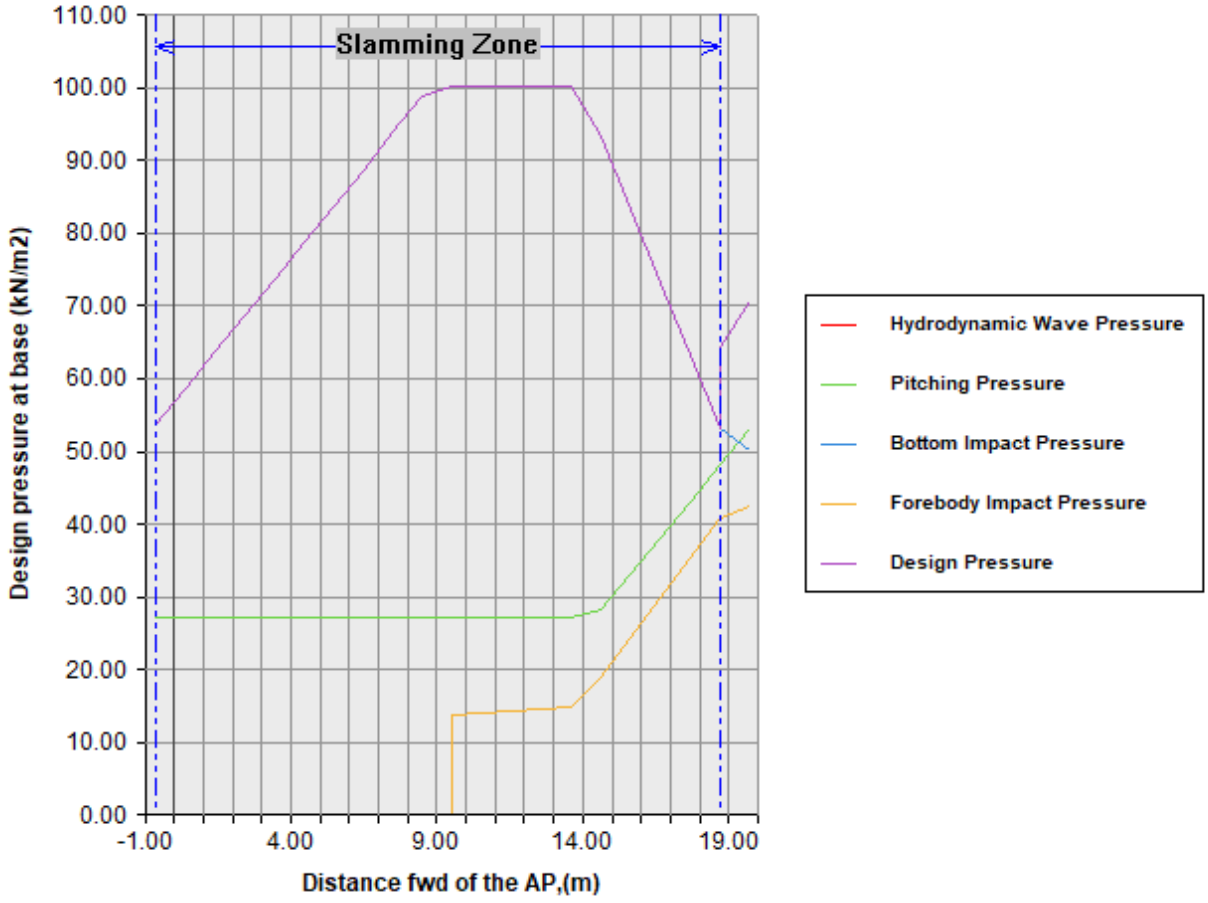
Distance fwd of the AP,(m)	0.500	0.550	0.600	0.650	0.700	0.750	0.800	0.850	0.900
Hydrodynamic Wave Pressure	27.085	27.085	27.085	27.085	27.085	28.226	33.187	38.148	43.110
Pitching Pressure	27.085	27.085	27.085	27.085	27.085	28.226	33.187	38.148	43.110
Bottom Impact Pressure	107.379	107.379	107.379	107.379	107.379	100.030	89.301	78.572	67.843
Forebody Impact Pressure	0.000	13.495	14.097	14.699	15.302	15.904	20.137	26.041	31.944
Design Pressure	107.379	107.379	107.379	107.379	107.379	100.030	89.301	78.572	67.843

Distance fwd of the AP,(m)	0.450
Hydrodynamic Wave Pressure	27.085
Pitching Pressure	27.085
Bottom Impact Pressure	105.711
Forebody Impact Pressure	0.000
Design Pressure	105.711

Distance fwd of the AP,(m)	0.950	1.000
Hydrodynamic Wave Pressure	48.071	53.032
Pitching Pressure	48.071	53.032
Bottom Impact Pressure	57.115	53.689
Forebody Impact Pressure	37.848	43.751
Design Pressure	57.115	57.115

2.2 Mid Voyage

Property	Units	Entered
Basic Data		
Waterline Length	m	20.358
Draught	m	0.706
Displacement Mass	tonnes	54.837
Water Density	kg/m3	1025.000
Displacement Volume	m3	53.500
LCG from AP	m	8.342
Total Breadth of Hulls at LCG	m	4.175
Vertical Acceleration at LCG	g	0.515
Relative Vertical Speed	knots	5.546
Hull Type		Partially Submerged
In Contact with Water		Yes
Waterline Offset from AP	m	-0.710
Block Coefficient, Cb		0.665
Operational Parameters		
Allowable Speed	knots	16.000
Operating Mode		Non-displacement
Froude Number		0.582
Taylor Quotient		3.546
Volumetric Speed Number		13.957
Wave Height		
Significant	m	2.000
Maximum	m	*3.334*
Surviving	m	*2.580*
Additional Data		
Operational Height	m	0.775
Air Gap	m	0.768
Girth Distance	m	2.721



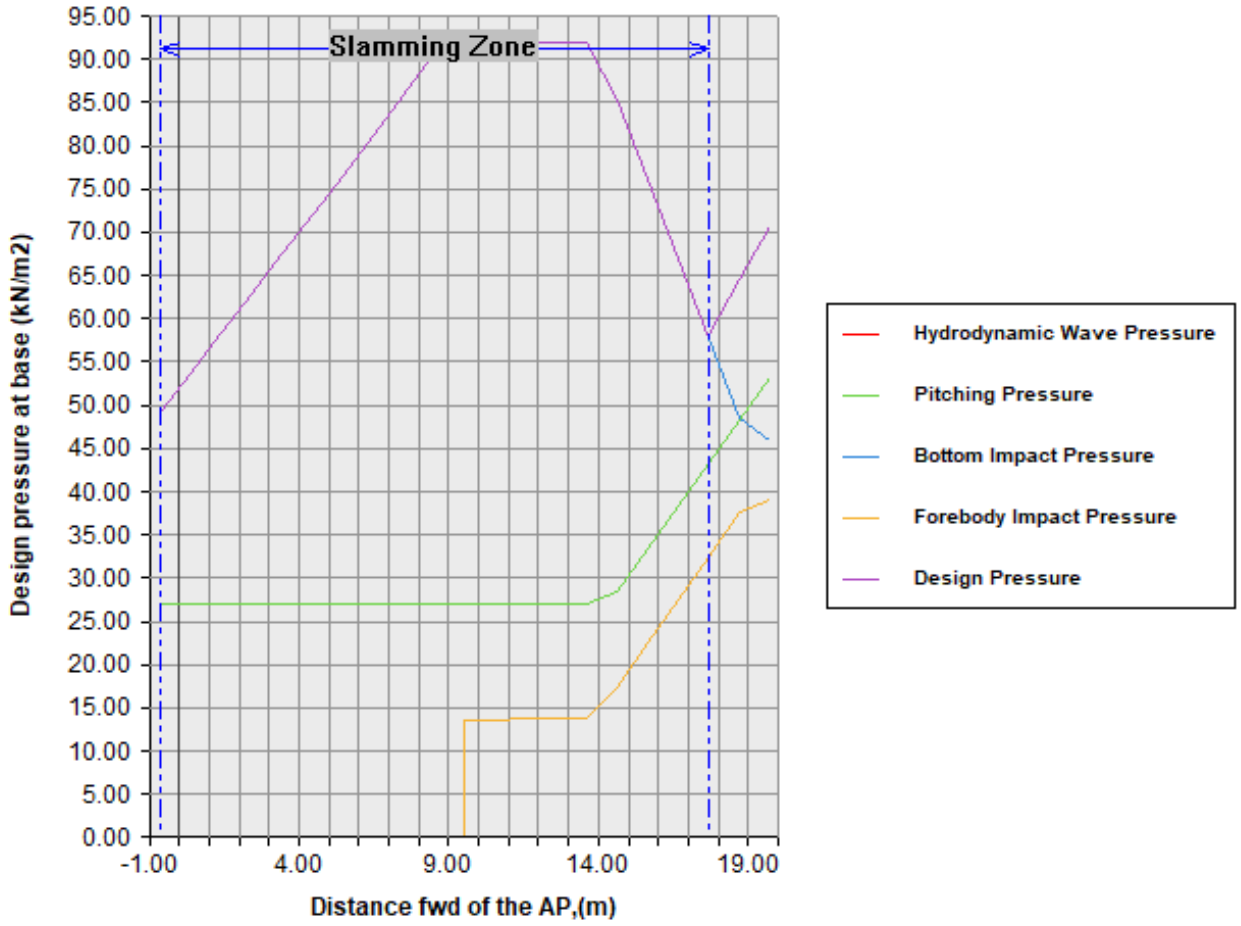
Distance fwd of the AP,(m)	0.000	0.050	0.100	0.150	0.200	0.250	0.300	0.350	0.400	0.450
Hydrodynamic Wave Pressure	27.072	27.072	27.072	27.072	27.072	27.072	27.072	27.072	27.072	27.072
Pitching Pressure	27.072	27.072	27.072	27.072	27.072	27.072	27.072	27.072	27.072	27.072
Bottom Impact Pressure	53.657	58.673	63.690	68.706	73.722	78.739	83.755	88.771	93.788	98.804
Forebody Impact Pressure	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Design Pressure	53.657	58.673	63.690	68.706	73.722	78.739	83.755	88.771	93.788	98.804
Distance fwd of the AP,(m)	0.500	0.550	0.600	0.650	0.700	0.750	0.800	0.850	0.900	0.950
Hydrodynamic Wave Pressure	27.072	27.072	27.072	27.072	27.072	28.285	33.249	38.212	43.176	48.140
Pitching Pressure	27.072	27.072	27.072	27.072	27.072	28.285	33.249	38.212	43.176	48.140

Bottom Impact Pressure	100.317	100.317	100.317	100.317	100.317	93.305	83.272	73.239	63.207	53.174
Forebody Impact Pressure	0.000	13.856	14.130	14.404	14.679	14.953	18.894	24.414	29.934	35.455
Design Pressure	100.317	100.317	100.317	100.317	100.317	93.305	83.272	73.239	63.207	53.174

Distance fwd of the AP,(m)	1.000
Hydrodynamic Wave Pressure	53.103
Pitching Pressure	53.103
Bottom Impact Pressure	50.158
Forebody Impact Pressure	40.975
Design Pressure	53.174

2.3 Arrival

Property	Units	Entered
Basic Data		
Waterline Length	m	20.335
Draught	m	0.706
Displacement Mass	tonnes	47.952
Water Density	kg/m3	1025.000
Displacement Volume	m3	46.782
LCG from AP	m	8.342
Total Breadth of Hulls at LCG	m	4.146
Vertical Acceleration at LCG	g	0.585
Relative Vertical Speed	knots	5.548
Hull Type		Partially Submerged
In Contact with Water		Yes
Waterline Offset from AP	m	-0.710
Block Coefficient, Cb		0.665
Operational Parameters		
Allowable Speed	knots	16.000
Operating Mode		Non-displacement
Froude Number		0.583
Taylor Quotient		3.548
Volumetric Speed Number		13.648
Wave Height		
Significant	m	2.000
Maximum	m	*3.334*
Surviving	m	*2.580*
Additional Data		
Operational Height	m	0.686
Air Gap	m	0.852
Girth Distance	m	2.721



Distance fwd of the AP,(m)	0.000	0.050	0.100	0.150	0.200	0.250	0.300	0.350	0.400	0.450
Hydrodynamic Wave Pressure	27.057	27.057	27.057	27.057	27.057	27.057	27.057	27.057	27.057	27.057
Pitching Pressure	27.057	27.057	27.057	27.057	27.057	27.057	27.057	27.057	27.057	27.057
Bottom Impact Pressure	49.125	53.723	58.320	62.918	67.515	72.113	76.710	81.308	85.905	90.503
Forebody Impact Pressure	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Design Pressure	49.125	53.723	58.320	62.918	67.515	72.113	76.710	81.308	85.905	90.503
Distance fwd of the AP,(m)	0.500	0.550	0.600	0.650	0.700	0.750	0.800	0.850	0.900	0.950
Hydrodynamic Wave Pressure	27.057	27.057	27.057	27.057	27.057	28.357	33.324	38.290	43.257	48.223
Pitching Pressure	27.057	27.057	27.057	27.057	27.057	28.357	33.324	38.290	43.257	48.223
Bottom Impact Pressure	91.837	91.837	91.837	91.837	91.837	85.255	76.060	66.865	57.670	48.475
Forebody Impact Pressure	0.000	13.666	13.689	13.712	13.735	13.758	17.386	22.446	27.505	32.565

Design Pressure	91.837	91.837	91.837	91.837	91.837	85.255	76.060	66.865	57.670	57.670

Distance fwd of the AP,(m)	1.000
Hydrodynamic Wave Pressure	53.190
Pitching Pressure	53.190
Bottom Impact Pressure	45.919
Forebody Impact Pressure	37.624
Design Pressure	58.271

3 Global_Loadings

N/A

4 Materials

4.1 Core

4.1.1 PU Foam

Property	Units	Entered
Material		Other
Density	kg/m3	48.000
Tensile Modulus	N/mm2	35.000
Compressive Modulus	N/mm2	55.000
Ultimate Tensile Strength	N/mm2	1.000
Ultimate Shear Strength	N/mm2	0.700
Shear Modulus	N/mm2	18.000
Ultimate Compressive Strength	N/mm2	0.750

4.1.2 Airex C70.55

Property	Units	Entered
Material		PVC
Density	kg/m3	60.000
Tensile Modulus	N/mm2	35.000
Compressive Modulus	N/mm2	55.000

Ultimate Tensile Strength	N/mm2	1.000
Ultimate Shear Strength	N/mm2	0.700
Shear Modulus	N/mm2	18.000
Ultimate Compressive Strength	N/mm2	0.750

4.1.3 Airex C70.75

Property	Units	Entered
Material		PVC
Density	kg/m3	80.000
Tensile Modulus	N/mm2	50.000
Compressive Modulus	N/mm2	80.000
Ultimate Tensile Strength	N/mm2	1.600
Ultimate Shear Strength	N/mm2	1.000
Shear Modulus	N/mm2	24.000
Ultimate Compressive Strength	N/mm2	1.100

4.2 Vinylester Laminates

4.2.1 E-LT 414

Property	Units	Entered
Weight	g/m2	414.000
Reinforcement Type		WR/CP
Reinforcement material		Glass
Fibre Content		0.694
Width of Tape (UDR Only)	mm	0.000
Compressive Modulus	N/mm2	35555.000
Tensile Modulus	N/mm2	35555.000
Ultimate Compressive Strength	N/mm2	671.682
Ultimate Tensile Strength	N/mm2	671.682
In plane shear strength	N/mm2	160.000
In plane shear modulus	N/mm2	3971.000
Specific Gravity		2.560

4.2.2 E-BX 400

Property	Units	Entered
Weight	g/m2	400.000
Reinforcement Type		WR/CP
Reinforcement material		Glass
Fibre Content		0.556
Width of Tape (UDR Only)	mm	0.000
Compressive Modulus	N/mm2	10995.000
Tensile Modulus	N/mm2	10995.000
Ultimate Compressive Strength	N/mm2	103.344
Ultimate Tensile Strength	N/mm2	103.344
In plane shear strength	N/mm2	160.743
In plane shear modulus	N/mm2	8490.000
Specific Gravity		2.560

4.2.3 E-BX 450

Property	Units	Entered
Weight	g/m2	450.000
Reinforcement Type		WR/CP
Reinforcement material		Glass
Fibre Content		0.556
Width of Tape (UDR Only)	mm	0.000
Compressive Modulus	N/mm2	7763.000
Tensile Modulus	N/mm2	7763.000
Ultimate Compressive Strength	N/mm2	72.574
Ultimate Tensile Strength	N/mm2	72.574
In plane shear strength	N/mm2	111.688
In plane shear modulus	N/mm2	5889.000
Specific Gravity		2.560

4.2.4 CSM 100

Property	Units	Entered
Weight	g/m2	100.000
Reinforcement Type		CSM
Reinforcement material		Glass
Fibre Content		0.330
Width of Tape (UDR Only)	mm	0.000
Compressive Modulus	N/mm2	7200.000
Tensile Modulus	N/mm2	6950.000
Ultimate Compressive Strength	N/mm2	121.500
Ultimate Tensile Strength	N/mm2	91.000
In plane shear strength	N/mm2	64.400
In plane shear modulus	N/mm2	2801.000
Specific Gravity		0.000

4.2.5 CSM 150

Property	Units	Entered
Weight	g/m2	150.000
Reinforcement Type		CSM
Reinforcement material		Glass
Fibre Content		0.330
Width of Tape (UDR Only)	mm	0.000
Compressive Modulus	N/mm2	7200.000
Tensile Modulus	N/mm2	6950.000
Ultimate Compressive Strength	N/mm2	121.500
Ultimate Tensile Strength	N/mm2	91.000
In plane shear strength	N/mm2	64.400
In plane shear modulus	N/mm2	2801.000
Specific Gravity		0.000

4.2.6 E-LT 600

Property	Units	Entered
Weight	g/m2	608.000
Reinforcement Type		WR/CP
Reinforcement material		Glass
Fibre Content		0.556
Width of Tape (UDR Only)	mm	0.000
Compressive Modulus	N/mm2	17852.000
Tensile Modulus	N/mm2	17852.000
Ultimate Compressive Strength	N/mm2	336.450
Ultimate Tensile Strength	N/mm2	336.450
In plane shear strength	N/mm2	48.100
In plane shear modulus	N/mm2	2406.000
Specific Gravity		2.560

4.2.7 EBX/MAT 600/100

Property	Units	Entered
Weight	g/m2	710.000
Reinforcement Type		WR/CP
Reinforcement material		Glass
Fibre Content		0.550
Width of Tape (UDR Only)	mm	0.000
Compressive Modulus	N/mm2	11373.000
Tensile Modulus	N/mm2	11373.000
Ultimate Compressive Strength	N/mm2	99.299
Ultimate Tensile Strength	N/mm2	99.299
In plane shear strength	N/mm2	106.910
In plane shear modulus	N/mm2	7440.000
Specific Gravity		2.560

4.2.8 EQX 820

Property	Units	Entered
Weight	g/m2	820.000
Reinforcement Type		WR/CP
Reinforcement material		Glass
Fibre Content		0.550
Width of Tape (UDR Only)	mm	0.000
Compressive Modulus	N/mm2	19290.000
Tensile Modulus	N/mm2	19290.000
Ultimate Compressive Strength	N/mm2	127.094
Ultimate Tensile Strength	N/mm2	127.094
In plane shear strength	N/mm2	145.810
In plane shear modulus	N/mm2	5638.000
Specific Gravity		2.560

4.2.9 E-BX 996

Property	Units	Entered
Weight	g/m2	996.000
Reinforcement Type		WR/CP
Reinforcement material		Glass
Fibre Content		0.550
Width of Tape (UDR Only)	mm	0.000
Compressive Modulus	N/mm2	8010.000
Tensile Modulus	N/mm2	8010.000
Ultimate Compressive Strength	N/mm2	71.709
Ultimate Tensile Strength	N/mm2	71.709
In plane shear strength	N/mm2	117.091
In plane shear modulus	N/mm2	6185.000
Specific Gravity		2.560

4.2.10 E-BX 810

Property	Units	Entered
Weight	g/m2	810.000
Reinforcement Type		WR/CP
Reinforcement material		Glass
Fibre Content		0.550
Width of Tape (UDR Only)	mm	0.000
Compressive Modulus	N/mm2	8010.000
Tensile Modulus	N/mm2	8010.000
Ultimate Compressive Strength	N/mm2	71.709
Ultimate Tensile Strength	N/mm2	71.709
In plane shear strength	N/mm2	117.091
In plane shear modulus	N/mm2	6185.000
Specific Gravity		2.560

4.2.11 E-BX 910

Property	Units	Entered
Weight	g/m2	910.000
Reinforcement Type		WR/CP
Reinforcement material		Glass
Fibre Content		0.550
Width of Tape (UDR Only)	mm	0.000
Compressive Modulus	N/mm2	8010.000
Tensile Modulus	N/mm2	8010.000
Ultimate Compressive Strength	N/mm2	71.709
Ultimate Tensile Strength	N/mm2	71.709
In plane shear strength	N/mm2	117.099
In plane shear modulus	N/mm2	6185.000
Specific Gravity		2.560

4.2.12 E-LT 625

Property	Units	Entered
Weight	g/m2	625.000
Reinforcement Type		WR/CP
Reinforcement material		Glass
Fibre Content		0.550
Width of Tape (UDR Only)	mm	0.000
Compressive Modulus	N/mm2	25023.000
Tensile Modulus	N/mm2	25023.000
Ultimate Compressive Strength	N/mm2	471.895
Ultimate Tensile Strength	N/mm2	471.895
In plane shear strength	N/mm2	68.369
In plane shear modulus	N/mm2	3418.000
Specific Gravity		2.560

4.2.13 EUD600

Property	Units	Entered
Weight	g/m2	600.000
Reinforcement Type		UDR
Reinforcement material		Glass
Fibre Content		0.500
Width of Tape (UDR Only)	mm	150.000
Compressive Modulus	N/mm2	18380.000
Tensile Modulus	N/mm2	18380.000
Ultimate Compressive Strength	N/mm2	192.900
Ultimate Tensile Strength	N/mm2	238.700
In plane shear strength	N/mm2	13.250
In plane shear modulus	N/mm2	1275.000
Transverse Compressive Strength	N/mm2	36.100
Transverse Tensile Strength	N/mm2	12.600

Transverse Elastic Modulus	N/mm2	3650.000
Specific Gravity		2.560

4.2.14 E-BX 600

Property	Units	Entered
Weight	g/m2	600.000
Reinforcement Type		WR/CP
Reinforcement material		Glass
Fibre Content		0.500
Width of Tape (UDR Only)	mm	0.000
Compressive Modulus	N/mm2	10999.000
Tensile Modulus	N/mm2	10999.000
Ultimate Compressive Strength	N/mm2	103.381
Ultimate Tensile Strength	N/mm2	103.381
In plane shear strength	N/mm2	160.797
In plane shear modulus	N/mm2	8493.000
Specific Gravity		2.560

5 Profiles

5.1 Panels

5.1.1 X/D_C70.75 x 35

Property	Units	Entered
Compressive Modulus	N/mm2	13289.605
Inner skin compressive modulus	N/mm2	11803.274
Outer skin compressive modulus	N/mm2	14347.592
Thickness	mm	39.348
Tensile Modulus	N/mm2	13289.605
Ultimate Flexural Strength	N/mm2	258.655
Fibre Content		0.550
Weight/Unit Area	kg/m2	13.164
Inner skin critical wrinkling stress	N/mm2	141.494
Outer skin critical wrinkling stress	N/mm2	151.007

Resin Specific Gravity		1.440

Layup

Description	Fibre Type	Fibre Content	Thickness (mm)	Weight (g/m2)
	EBX/MAT 600/100	0.550	0.708	710.000
	E-BX 910	0.550	0.616	910.000
	EQX 820	0.550	0.608	820.000
	EQX 820	0.550	0.608	820.000
	Airex C70.75		35.000	
	E-BX 810	0.550	0.600	810.000
	E-BX 810	0.550	0.600	810.000
	EQX 820	0.550	0.608	820.000

5.1.2 T/S_C70.75 x 25

Property	Units	Entered
Compressive Modulus	N/mm2	13328.224
Inner skin compressive modulus	N/mm2	13687.351
Outer skin compressive modulus	N/mm2	13056.233
Thickness	mm	30.606
Tensile Modulus	N/mm2	13328.224
Ultimate Flexural Strength	N/mm2	258.655
Fibre Content		0.550
Weight/Unit Area	kg/m2	15.665
Inner skin critical wrinkling stress	N/mm2	148.654
Outer skin critical wrinkling stress	N/mm2	146.333
Resin Specific Gravity		1.440

Layup

Description	Fibre Type	Fibre Content	Thickness (mm)	Weight (g/m2)
	EBX/MAT 600/100	0.550	0.708	710.000
	E-BX 910	0.550	0.616	910.000
	EQX 820	0.550	0.608	820.000
	EQX 820	0.550	0.608	820.000
	E-BX 996	0.550	0.650	996.000
	Airex C70.75		25.000	
	E-BX 810	0.550	0.600	810.000
	E-BX 810	0.550	0.600	810.000
	EQX 820	0.550	0.608	820.000
	EQX 820	0.550	0.608	820.000

5.1.3 W/D_C70.55 x 25

Property	Units	Entered
Compressive Modulus	N/mm2	14176.281
Inner skin compressive modulus	N/mm2	12649.909
Outer skin compressive modulus	N/mm2	15563.128
Thickness	mm	28.466
Tensile Modulus	N/mm2	14176.281
Ultimate Flexural Strength	N/mm2	258.655
Fibre Content		0.550
Weight/Unit Area	kg/m2	10.536
Inner skin critical wrinkling stress	N/mm2	144.799
Outer skin critical wrinkling stress	N/mm2	155.156
Resin Specific Gravity		1.440

Layup

Description	Fibre Type	Fibre Content	Thickness (mm)	Weight (g/m2)
	EQX 820	0.550	0.608	820.000
	E-BX 810	0.550	0.600	810.000
	EQX 820	0.550	0.608	820.000
	Airex C70.75		25.000	
	E-BX 810	0.550	0.600	810.000
	E-LT 625	0.550	0.450	625.000
	E-BX 810	0.550	0.600	810.000

5.1.4 SS/S_C70.55 x 20

Property	Units	Entered
Compressive Modulus	N/mm2	15459.202
Inner skin compressive modulus	N/mm2	13671.220
Outer skin compressive modulus	N/mm2	17126.353
Thickness	mm	24.518
Tensile Modulus	N/mm2	15442.602
Ultimate Flexural Strength	N/mm2	244.585
Fibre Content		0.524
Weight/Unit Area	kg/m2	9.629
Inner skin critical wrinkling stress	N/mm2	119.156
Outer skin critical wrinkling stress	N/mm2	128.451
Resin Specific Gravity		1.440

Layup

Description	Fibre Type	Fibre Content	Thickness (mm)	Weight (g/m2)
	CSM 150	0.330	0.300	150.000
	E-BX 600	0.500	0.600	600.000
	EQX 820	0.550	0.820	820.000
	E-LT 625	0.550	0.618	625.000
	Airex C70.55		20.000	
	E-BX 996	0.550	0.960	996.000
	E-LT 625	0.550	0.620	625.000
	E-BX 600	0.500	0.600	600.000

5.1.5 BHD_C70.55 x 20

Property	Units	Entered
Compressive Modulus	N/mm2	13697.309
Inner skin compressive modulus	N/mm2	13697.309
Outer skin compressive modulus	N/mm2	13697.309
Thickness	mm	24.340
Tensile Modulus	N/mm2	13697.309
Ultimate Flexural Strength	N/mm2	250.771
Fibre Content		0.536
Weight/Unit Area	kg/m2	9.495
Inner skin critical wrinkling stress	N/mm2	119.232
Outer skin critical wrinkling stress	N/mm2	119.232
Resin Specific Gravity		1.440

Layup

Description	Fibre Type	Fibre Content	Thickness (mm)	Weight (g/m2)
	E-BX 996	0.550	0.950	996.000
	E-LT 625	0.550	0.620	625.000
	E-BX 600	0.500	0.600	600.000
	Airex C70.55		20.000	
	E-BX 600	0.500	0.600	600.000
	E-LT 625	0.550	0.620	625.000
	E-BX 996	0.550	0.950	996.000

5.1.6 Mono.Btm

Property	Units	Entered
Compressive Modulus	N/mm2	11325.699
Thickness	mm	10.780
Tensile Modulus	N/mm2	11325.699
Ultimate Flexural Strength	N/mm2	258.655
Fibre Content		0.550
Weight/Unit Area	kg/m2	22.045
Resin Specific Gravity		1.440

Layup

Description	Fibre Type	Fibre Content	Thickness (mm)	Weight (g/m2)
	EBX/MAT 600/100	0.550	0.700	710.000
	E-BX 910	0.550	0.910	910.000
	EQX 820	0.550	0.820	820.000
	EQX 820	0.550	0.820	820.000
	E-BX 996	0.550	0.980	996.000
	E-BX 996	0.550	0.980	996.000
	E-BX 996	0.550	0.980	996.000
	E-BX 996	0.550	0.980	996.000
	E-BX 996	0.550	0.980	996.000
	E-BX 810	0.550	0.810	810.000
	E-BX 810	0.550	0.810	810.000
	E-LT 625	0.550	0.610	625.000

	EQX 820	0.550	0.200	820.000
	EQX 820	0.550	0.200	820.000

5.1.7 Mono.Btm Keel

Property	Units	Entered
Compressive Modulus	N/mm2	11325.699
Thickness	mm	21.560
Tensile Modulus	N/mm2	11325.699
Ultimate Flexural Strength	N/mm2	258.655
Fibre Content		0.550
Weight/Unit Area	kg/m2	44.091
Resin Specific Gravity		1.440

Layup

Description	Fibre Type	Fibre Content	Thickness (mm)	Weight (g/m2)
	EBX/MAT 600/100	0.550	0.700	710.000
	E-BX 910	0.550	0.910	910.000
	EQX 820	0.550	0.820	820.000
	EQX 820	0.550	0.820	820.000
	E-BX 996	0.550	0.980	996.000
	E-BX 996	0.550	0.980	996.000
	E-BX 996	0.550	0.980	996.000
	E-BX 996	0.550	0.980	996.000
	E-BX 996	0.550	0.980	996.000
	E-BX 810	0.550	0.810	810.000

	E-BX 810	0.550	0.810	810.000
	E-LT 625	0.550	0.610	625.000
	EQX 820	0.550	0.200	820.000
	EQX 820	0.550	0.200	820.000
	EBX/MAT 600/100	0.550	0.700	710.000
	E-BX 910	0.550	0.910	910.000
	EQX 820	0.550	0.820	820.000
	EQX 820	0.550	0.820	820.000
	E-BX 996	0.550	0.980	996.000
	E-BX 996	0.550	0.980	996.000
	E-BX 996	0.550	0.980	996.000
	E-BX 996	0.550	0.980	996.000
	E-BX 996	0.550	0.980	996.000
	E-BX 810	0.550	0.810	810.000
	E-BX 810	0.550	0.810	810.000
	E-LT 625	0.550	0.610	625.000
	EQX 820	0.550	0.200	820.000
	EQX 820	0.550	0.200	820.000

5.2 Stiffeners

5.2.1 Top Hat_150 x150

Property	Units	Entered	Required
Width of Base	mm	150.000	
Width of Crown	mm	150.000	
Web Depth	mm	150.000	
Crown Thickness	mm	6.600	4.200
Ultimate Tensile Strength	N/mm2	154.000	
Core Material		PU Foam	
Resin Specific Gravity		1.440	
Web Thickness	mm	4.200	3.849
Fibre Content		0.500	

Weight/Unit Length	kg/m	7.356	

Layup

Description	Fibre Type	Fibre Content	Thickness (mm)	Weight (g/m2)	Web Extent Type	Boundary Bonding Type
	E-BX 600	0.500	0.600	600.000	Full	Standard
	E-BX 600	0.500	0.600	600.000	Full	Standard
	EUD600	0.500	0.600	600.000	None	
	E-BX 600	0.500	0.600	600.000	Full	Standard
	EUD600	0.500	0.600	600.000	None	
	E-BX 600	0.500	0.600	600.000	Full	Standard
	EUD600	0.500	0.600	600.000	None	
	E-BX 600	0.500	0.600	600.000	Full	Standard
	EUD600	0.500	0.600	600.000	None	
	E-BX 600	0.500	0.600	600.000	Full	Standard
	E-BX 600	0.500	0.600	600.000	Full	Standard

5.2.2 Top Hat_150 x 185

Property	Units	Entered	Required
Width of Base	mm	150.000	
Width of Crown	mm	150.000	
Web Depth	mm	185.000	
Crown Thickness	mm	9.000	4.800
Ultimate Tensile Strength	N/mm2	154.000	
Core Material		PU Foam	
Resin Specific Gravity		1.440	
Web Thickness	mm	4.800	4.544
Fibre Content		0.500	
Weight/Unit Length	kg/m	10.284	

Layup

Description	Fibre Type	Fibre Content	Thickness (mm)	Weight (g/m2)	Web Extent Type	Boundary Bonding Type
	E-BX 600	0.500	0.600	600.000	Full	Standard
	EUD600	0.500	0.600	600.000	None	
	E-BX 600	0.500	0.600	600.000	Full	Standard
	EUD600	0.500	0.600	600.000	None	
	E-BX 600	0.500	0.600	600.000	Full	Standard
	EUD600	0.500	0.600	600.000	None	
	E-BX 600	0.500	0.600	600.000	Full	Standard
	EUD600	0.500	0.600	600.000	None	
	E-BX 600	0.500	0.600	600.000	Full	Standard
	EUD600	0.500	0.600	600.000	None	
	E-BX 600	0.500	0.600	600.000	Full	Standard
	EUD600	0.500	0.600	600.000	None	
	E-BX 600	0.500	0.600	600.000	Full	Standard
	E-BX 600	0.500	0.600	600.000	Full	Standard
	EUD600	0.500	0.600	600.000	None	

5.2.3 Top Hat_200 x 240

Property	Units	Entered	Required
Width of Base	mm	200.000	
Width of Crown	mm	150.000	
Web Depth	mm	240.000	
Crown Thickness	mm	14.400	7.200
Ultimate Tensile Strength	N/mm2	154.000	
Core Material		PU Foam	
Resin Specific Gravity		1.440	
Web Thickness	mm	7.200	5.635
Fibre Content		0.500	
Weight/Unit Length	kg/m	19.477	

Layup

Description	Fibre Type	Fibre Content	Thickness (mm)	Weight (g/m2)	Web Extent Type	Boundary Bonding Type
	E-BX 600	0.500	0.600	600.000	Full	Standard
	EUD600	0.500	0.600	600.000	None	
	E-BX 600	0.500	0.600	600.000	Full	Standard
	EUD600	0.500	0.600	600.000	None	
	E-BX 600	0.500	0.600	600.000	Full	Standard
	EUD600	0.500	0.600	600.000	None	
	E-BX 600	0.500	0.600	600.000	Full	Standard
	EUD600	0.500	0.600	600.000	None	
	E-BX 600	0.500	0.600	600.000	Full	Standard
	EUD600	0.500	0.600	600.000	None	
	E-BX 600	0.500	0.600	600.000	Full	Standard
	EUD600	0.500	0.600	600.000	None	
	E-BX 600	0.500	0.600	600.000	Full	Standard
	EUD600	0.500	0.600	600.000	None	
	E-BX 600	0.500	0.600	600.000	Full	Standard
	EUD600	0.500	0.600	600.000	None	
	E-BX 600	0.500	0.600	600.000	Full	Standard
	EUD600	0.500	0.600	600.000	None	
	E-BX 600	0.500	0.600	600.000	Full	Standard
	EUD600	0.500	0.600	600.000	None	
	E-BX 600	0.500	0.600	600.000	Full	Standard
	EUD600	0.500	0.600	600.000	None	
	E-BX 600	0.500	0.600	600.000	Full	Standard
	EUD600	0.500	0.600	600.000	None	

5.2.4 Top Hat_100 x 100

Property	Units	Entered	Required
Width of Base	mm	100.000	
Width of Crown	mm	100.000	
Web Depth	mm	100.000	
Crown Thickness	mm	3.000	3.000
Ultimate Tensile Strength	N/mm2	72.000	
Core Material		PU Foam	
Resin Specific Gravity		1.440	

Web Thickness	mm	3.000	2.857
Fibre Content		0.500	
Weight/Unit Length	kg/m	2.940	

Layup

Description	Fibre Type	Fibre Content	Thickness (mm)	Weight (g/m2)	Web Extent Type	Boundary Bonding Type
	E-BX 600	0.500	0.600	600.000	Full	Standard
	E-BX 600	0.500	0.600	600.000	Full	Standard
	E-BX 600	0.500	0.600	600.000	Full	Standard
	E-BX 600	0.500	0.600	600.000	Full	Standard
	E-BX 600	0.500	0.600	600.000	Full	Standard

5.2.5 Top Hat_200 x 300

Property	Units	Entered	Required
Width of Base	mm	200.000	
Width of Crown	mm	150.000	
Web Depth	mm	370.000	
Crown Thickness	mm	15.600	8.400
Ultimate Tensile Strength	N/mm2	154.000	
Core Material		PU Foam	
Resin Specific Gravity		1.440	
Web Thickness	mm	8.400	8.214
Fibre Content		0.500	
Weight/Unit Length	kg/m	27.532	

Layup

Description	Fibre Type	Fibre Content	Thickness (mm)	Weight (g/m2)	Web Extent Type	Boundary Bonding Type
	E-BX 600	0.500	0.600	600.000	Full	Standard
	EUD600	0.500	0.600	600.000	None	
	E-BX 600	0.500	0.600	600.000	Full	Standard
	EUD600	0.500	0.600	600.000	None	
	E-BX 600	0.500	0.600	600.000	Full	Standard

	EUD600	0.500	0.600	600.000	None	
	E-BX 600	0.500	0.600	600.000	Full	Standard
	EUD600	0.500	0.600	600.000	None	
	E-BX 600	0.500	0.600	600.000	Full	Standard
	EUD600	0.500	0.600	600.000	None	
	E-BX 600	0.500	0.600	600.000	Full	Standard
	EUD600	0.500	0.600	600.000	None	
	E-BX 600	0.500	0.600	600.000	Full	Standard
	EUD600	0.500	0.600	600.000	None	
	E-BX 600	0.500	0.600	600.000	Full	Standard
	EUD600	0.500	0.600	600.000	None	
	E-BX 600	0.500	0.600	600.000	Full	Standard
	EUD600	0.500	0.600	600.000	None	
	E-BX 600	0.500	0.600	600.000	Full	Standard
	EUD600	0.500	0.600	600.000	None	
	E-BX 600	0.500	0.600	600.000	Full	Standard
	EUD600	0.500	0.600	600.000	None	
	E-BX 600	0.500	0.600	600.000	Full	Standard
	E-BX 600	0.500	0.600	600.000	Full	Standard
	E-BX 600	0.500	0.600	600.000	Full	Standard
	EUD600	0.500	0.600	600.000	None	

5.2.6 Top Hat_100 x 185

Property	Units	Entered	Required
Width of Base	mm	150.000	
Width of Crown	mm	150.000	
Web Depth	mm	185.000	
Crown Thickness	mm	9.080	4.880
Ultimate Tensile Strength	N/mm2	154.000	
Core Material		PU Foam	
Resin Specific Gravity		1.440	
Web Thickness	mm	4.880	4.544
Fibre Content		0.500	
Weight/Unit Length	kg/m	10.284	

Layup

Description	Fibre Type	Fibre Content	Thickness (mm)	Weight (g/m2)	Web Extent Type	Boundary Bonding Type
	E-BX 600	0.500	0.610	600.000	Full	Standard
	EUD600	0.500	0.600	600.000	None	
	E-BX 600	0.500	0.610	600.000	Full	Standard
	EUD600	0.500	0.600	600.000	None	
	E-BX 600	0.500	0.610	600.000	Full	Standard
	EUD600	0.500	0.600	600.000	None	
	E-BX 600	0.500	0.610	600.000	Full	Standard
	EUD600	0.500	0.600	600.000	None	
	E-BX 600	0.500	0.610	600.000	Full	Standard
	EUD600	0.500	0.600	600.000	None	
	E-BX 600	0.500	0.610	600.000	Full	Standard
	EUD600	0.500	0.600	600.000	None	
	E-BX 600	0.500	0.610	600.000	Full	Standard
	E-BX 600	0.500	0.610	600.000	Full	Standard
	EUD600	0.500	0.600	600.000	None	

5.2.7 Top Hat_150 x100

Property	Units	Entered	Required
Width of Base	mm	150.000	
Width of Crown	mm	150.000	
Web Depth	mm	100.000	
Crown Thickness	mm	6.060	3.660
Ultimate Tensile Strength	N/mm2	154.000	
Core Material		PU Foam	
Resin Specific Gravity		1.440	
Web Thickness	mm	3.660	2.857
Fibre Content		0.500	
Weight/Unit Length	kg/m	5.460	

Layup

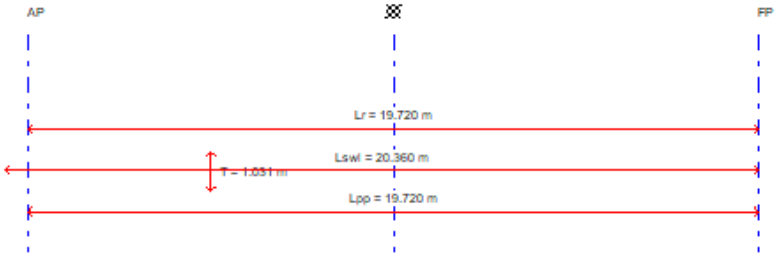
Description	Fibre Type	Fibre Content	Thickness (mm)	Weight (g/m2)	Web Extent Type	Boundary Bonding Type

	E-BX 600	0.500	0.610	600.000	Full	Standard
	E-BX 600	0.500	0.610	600.000	Full	Standard
	EUD600	0.500	0.600	600.000	None	
	E-BX 600	0.500	0.610	600.000	Full	Standard
	EUD600	0.500	0.600	600.000	None	
	E-BX 600	0.500	0.610	600.000	Full	Standard
	EUD600	0.500	0.600	600.000	None	
	E-BX 600	0.500	0.610	600.000	Full	Standard
	EUD600	0.500	0.600	600.000	None	
	E-BX 600	0.500	0.610	600.000	Full	Standard

6 Transverse_Sections

Refer to drawing TEG -1451-A-083-MIDSHIP SECTION

7 Structure

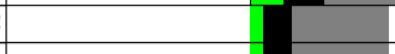
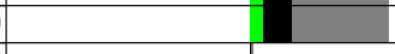


7.1 I/B TOPSIDE

7.1.1 Fr - 0.5_Plate

Property	Units	Entered	Derived	Required
Base Width of Stiffener	mm	20.000		
Inner Skin Thickness	mm	2.416		
Outer Skin Thickness	mm	3.190		
Weight of inner skin	g/m2	3260.000		3194.067
Weight of outer skin	g/m2	4256.000		4237.028
Direct Core Shear Stress	N/mm2	0.435		0.450
Bending Moment	Nm	7.970		
Poisson's Ratio		0.000		
Deflection	mm	7.347		9.330
Wrinkling Stress for inner skin	N/mm2	23.505		44.596
Wrinkling Stress for outer skin	N/mm2	9.473		43.900
X-ply rule compliance		PASS		
Thickness	mm	30.606		
Curvature	mm	7.000		
Panel Breadth	mm	933.000		
Panel Length	mm	1038.000		
Panel Aspect Ratio		1.113		
Stiffener Spacing	mm	953.000		
Neutral Axis	mm	14.037		
Stiffness	N cm4/mm2	14587.699		
Test At	mm	400.000		
Layup		T/S_C70.75 x 25		
Slamming Zone		No		
Height of Wet Deck	m	1.564		
Height of weather deck	m	2.548		
Height of Chine	m	0.209		
Height above Base	m	0.682		
Distance FWD of AP	m	0.519		
Design Pressure	kN/m2	36.181	*36.181*	
Vertical distance of underside of keel above baseline, zk	m	-0.010		
Mean deadrise angle of bottom plating at location	deg	12.000		
Mean deadrise angle of side plating at local section	deg	84.000		

XPly

Ply Description	Actual Stress N/mm2	Allowable Stress N/mm2	Ultimate Stress N/mm2	Stress Fraction	C < > T
EQX 820	*17.462*	38.128	*127.094*	*0.137*	
EQX 820	*16.821*	38.128	*127.094*	*0.132*	
E-BX 810	*6.719*	21.513	*71.709*	*0.094*	
E-BX 810	*6.456*	21.513	*71.709*	*0.090*	
Airex C70.75	*0.039*	0.480	*1.600*	*0.024*	
Airex C70.75	*-0.047*	-0.330	*-1.100*	*0.043*	
E-BX 996	*-5.031*	-21.513	*-71.709*	*0.070*	
EQX 820	*-12.757*	-38.128	*-127.094*	*0.100*	
EQX 820	*-13.397*	-38.128	*-127.094*	*0.105*	
E-BX 910	*-5.833*	-21.513	*-71.709*	*0.081*	
EBX/MAT 600/100	*-8.721*	-29.790	*-99.299*	*0.088*	

7.1.2 Fr. 10_IB_Plate

Property	Units	Entered	Derived	Required
Base Width of Stiffener	mm	150.000		
Inner Skin Thickness	mm	2.416		
Outer Skin Thickness	mm	3.190		
Weight of inner skin	g/m2	3260.000		3194.067
Weight of outer skin	g/m2	4256.000		4237.028
Direct Core Shear Stress	N/mm2	0.357		0.450
Bending Moment	Nm	-10.049		
Poisson's Ratio		0.000		
Deflection	mm	4.868		8.180
Wrinkling Stress for inner skin	N/mm2	14.848		44.596
Wrinkling Stress for outer skin	N/mm2	8.594		43.900
X-ply rule compliance		PASS		
Thickness	mm	30.606		
Curvature	mm	10.000		
Panel Breadth	mm	818.000		
Panel Length	mm	942.000		
Panel Aspect Ratio		1.152		
Stiffener Spacing	mm	968.000		
Neutral Axis	mm	14.099		
Stiffness	N cm4/mm2	14602.993		
Test At	mm	0.000		
Layup		T/S_C70.75 x 25		
Slamming Zone		No		
Height of Wet Deck	m	1.600		
Height of weather deck	m	2.794		
Height of Chine	m	0.467		
Height above Base	m	0.941		
Distance FWD of AP	m	9.752		
Design Pressure	kN/m2	33.267	*33.267*	
Vertical distance of underside of keel above baseline, zk	m	-0.230		
Mean deadrise angle of bottom plating at location	deg	25.000		
Mean deadrise angle of side plating at local section	deg	85.000		

XPly

Ply Description	Actual Stress N/mm2	Allowable Stress N/mm2	Ultimate Stress N/mm2	Stress Fraction	C < > T
EQX 820	*-21.911*	-38.128	*-127.094*	*0.172*	
EQX 820	*-21.104*	-38.128	*-127.094*	*0.166*	
E-BX 810	*-8.428*	-21.513	*-71.709*	*0.118*	
E-BX 810	*-8.098*	-21.513	*-71.709*	*0.113*	
Airex C70.75	*-0.078*	-0.330	*-1.100*	*0.071*	
Airex C70.75	*0.038*	0.480	*1.600*	*0.023*	
E-BX 996	*6.371*	21.513	*71.709*	*0.089*	
EQX 820	*16.150*	38.128	*127.094*	*0.127*	
EQX 820	*16.957*	38.128	*127.094*	*0.133*	
E-BX 910	*7.381*	21.513	*71.709*	*0.103*	
EBX/MAT 600/100	*11.034*	29.790	*99.299*	*0.111*	

7.1.3 Fr - 13.5_Plate

Property	Units	Entered	Derived	Required
Base Width of Stiffener	mm	20.000		
Inner Skin Thickness	mm	2.416		
Outer Skin Thickness	mm	3.190		
Weight of inner skin	g/m2	3260.000		3194.067
Weight of outer skin	g/m2	4256.000		4237.028
Direct Core Shear Stress	N/mm2	0.417		0.450
Bending Moment	Nm	7.920		
Poisson's Ratio		0.000		
Deflection	mm	6.975		9.600
Wrinkling Stress for inner skin	N/mm2	22.280		44.596
Wrinkling Stress for outer skin	N/mm2	8.964		43.900
X-ply rule compliance		PASS		
Thickness	mm	30.606		
Curvature	mm	3.000		
Panel Breadth	mm	960.000		
Panel Length	mm	980.000		
Panel Aspect Ratio		1.021		
Stiffener Spacing	mm	980.000		
Neutral Axis	mm	14.037		
Stiffness	N cm4/mm2	14587.699		
Test At	mm	450.000		
Layup		T/S_C70.75 x 25		
Slamming Zone		No		
Height of Wet Deck	m	1.564		
Height of weather deck	m	2.548		
Height of Chine	m	0.292		
Height above Base	m	0.763		
Distance FWD of AP	m	13.624		
Design Pressure	kN/m2	35.168	*35.168*	
Vertical distance of underside of keel above baseline, zk	m	-0.222		
Mean deadrise angle of bottom plating at location	deg	28.000		
Mean deadrise angle of side plating at local section	deg	84.000		

XPly

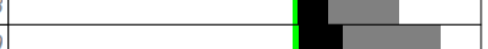
Ply Description	Actual Stress N/mm2	Allowable Stress N/mm2	Ultimate Stress N/mm2	Stress Fraction	C < > T
EQX 820	*17.353*	38.128	*127.094*	*0.137*	
EQX 820	*16.717*	38.128	*127.094*	*0.132*	
E-BX 810	*6.677*	21.513	*71.709*	*0.093*	
E-BX 810	*6.416*	21.513	*71.709*	*0.089*	
Airex C70.75	*0.038*	0.480	*1.600*	*0.024*	
Airex C70.75	*-0.047*	-0.330	*-1.100*	*0.043*	
E-BX 996	*-5.000*	-21.513	*-71.709*	*0.070*	
EQX 820	*-12.677*	-38.128	*-127.094*	*0.100*	
EQX 820	*-13.314*	-38.128	*-127.094*	*0.105*	
E-BX 910	*-5.796*	-21.513	*-71.709*	*0.081*	
EBX/MAT 600/100	*-8.667*	-29.790	*-99.299*	*0.087*	

7.1.4 Fr.10_IB_Trans.Web.Frm

Property	Units	Entered	Derived	Required
Shear Stress	N/mm2	6.289		25.740
Deflection	mm	0.105		4.500
Web Thickness	mm	4.200		3.849
Effective Span	m	0.900		
Stiffener Spacing	mm	968.000		
Width of Attached Plate	mm	262.120		
Bending Moment	Nm	-1188.695		
Profile		Top Hat_150 x150		
X-ply rule compliance		PASS		
Neutral Axis	mm	82.606		
Stiffness	N cm4/mm2	28619485.940		
Test At	mm	0.000		
Layup		T/S_C70.75 x 25		
Height of Wet Deck	m	2.794		
Height of weather deck	m	1.796		
Height of Chine	m	0.467		
Height above Base	m	1.000		
Distance FWD of AP	m	10.230		
Design Pressure	kN/m2	18.192	*18.192*	
Vertical distance of underside of keel above baseline, zk	m	-0.230		
Mean deadrise angle of bottom plating at location	deg	25.000		
Mean deadrise angle of side plating at local section	deg	85.000		

XPly

Ply Description	Actual Stress N/mm2	Allowable Stress N/mm2	Ultimate Stress N/mm2	Stress Fraction	C < > T
E-BX 600	*-4.779*	-34.116	*-103.381*	*0.046*	
E-BX 600	*-4.751*	-34.116	*-103.381*	*0.046*	
EUD600	*-7.894*	-63.657	*-192.900*	*0.041*	

Ply Description	Actual Stress N/mm2	Allowable Stress N/mm2	Ultimate Stress N/mm2	Stress Fraction	C < > T
E-BX 600	*-4.696*	-34.116	*-103.381*	*0.045*	
EUD600	*-7.802*	-63.657	*-192.900*	*0.040*	
E-BX 600	*-4.641*	-34.116	*-103.381*	*0.045*	
EUD600	*-7.710*	-63.657	*-192.900*	*0.040*	
E-BX 600	*-4.587*	-34.116	*-103.381*	*0.044*	
EUD600	*-7.619*	-63.657	*-192.900*	*0.039*	
E-BX 600	*-4.532*	-34.116	*-103.381*	*0.044*	
E-BX 600	*-4.504*	-34.116	*-103.381*	*0.044*	
EQX 820	*4.166*	41.941	*127.094*	*0.033*	
EQX 820	*4.215*	41.941	*127.094*	*0.033*	
E-BX 810	*1.770*	23.664	*71.709*	*0.025*	
E-BX 810	*1.790*	23.664	*71.709*	*0.025*	
Airex C70.75	*0.011*	0.528	*1.600*	*0.007*	
E-BX 996	*2.642*	23.664	*71.709*	*0.037*	
EQX 820	*6.415*	41.941	*127.094*	*0.050*	
EQX 820	*6.464*	41.941	*127.094*	*0.051*	
E-BX 910	*2.704*	23.664	*71.709*	*0.038*	
EBX/MAT 600/100	*3.869*	32.769	*99.299*	*0.039*	

7.2 O/B TOPSIDE – A

7.2.1 Fr - 0.5_Plate A

Property	Units	Entered	Derived	Required
Base Width of Stiffener	mm	20.000		
Inner Skin Thickness	mm	2.416		
Outer Skin Thickness	mm	3.190		
Weight of inner skin	g/m2	3260.000		3194.067
Weight of outer skin	g/m2	4256.000		4237.028
Direct Core Shear Stress	N/mm2	0.435		0.450
Bending Moment	Nm	7.970		
Poisson's Ratio		0.000		
Deflection	mm	7.347		9.330
Wrinkling Stress for inner skin	N/mm2	23.505		44.596
Wrinkling Stress for outer skin	N/mm2	9.473		43.900
X-ply rule compliance		PASS		
Thickness	mm	30.606		
Curvature	mm	7.000		
Panel Breadth	mm	933.000		
Panel Length	mm	1038.000		
Panel Aspect Ratio		1.113		
Stiffener Spacing	mm	953.000		
Neutral Axis	mm	14.037		
Stiffness	N cm4/mm2	14587.699		
Test At	mm	400.000		
Layup		T/S_C70.75 x 25		
Slamming Zone		No		
Height of weather deck	m	2.548		
Height of Chine	m	0.209		
Height above Base	m	0.682		
Distance FWD of AP	m	0.519		
Design Pressure	kN/m2	36.181	*36.181*	
Vertical distance of underside of keel above baseline, zk	m	-0.010		
Mean deadrise angle of bottom plating at location	deg	12.000		
Mean deadrise angle of side plating at local section	deg	84.000		

XPly

Ply Description	Actual Stress N/mm2	Allowable Stress N/mm2	Ultimate Stress N/mm2	Stress Fraction	C < > T
EQX 820	*17.462*	38.128	*127.094*	*0.137*	
EQX 820	*16.821*	38.128	*127.094*	*0.132*	
E-BX 810	*6.719*	21.513	*71.709*	*0.094*	
E-BX 810	*6.456*	21.513	*71.709*	*0.090*	
Airex C70.75	*0.039*	0.480	*1.600*	*0.024*	
Airex C70.75	*-0.047*	-0.330	*-1.100*	*0.043*	
E-BX 996	*-5.031*	-21.513	*-71.709*	*0.070*	
EQX 820	*-12.757*	-38.128	*-127.094*	*0.100*	
EQX 820	*-13.397*	-38.128	*-127.094*	*0.105*	
E-BX 910	*-5.833*	-21.513	*-71.709*	*0.081*	
EBX/MAT 600/100	*-8.721*	-29.790	*-99.299*	*0.088*	

7.2.2 Fr. 10_OB_Plate

Property	Units	Entered	Derived	Required
Base Width of Stiffener	mm	150.000		
Inner Skin Thickness	mm	2.416		
Outer Skin Thickness	mm	3.190		
Weight of inner skin	g/m2	3260.000		3194.067
Weight of outer skin	g/m2	4256.000		4237.028
Direct Core Shear Stress	N/mm2	0.408		0.450
Bending Moment	Nm	-12.759		
Poisson's Ratio		0.000		
Deflection	mm	6.132		8.180
Wrinkling Stress for inner skin	N/mm2	18.854		44.596
Wrinkling Stress for outer skin	N/mm2	10.912		43.900
X-ply rule compliance		PASS		
Thickness	mm	30.606		
Curvature	mm	16.000		
Panel Breadth	mm	818.000		
Panel Length	mm	2500.000		
Panel Aspect Ratio		3.056		
Stiffener Spacing	mm	968.000		
Neutral Axis	mm	14.099		
Stiffness	N cm4/mm2	14602.993		
Test At	mm	0.000		
Layup		T/S_C70.75 x 25		
Slamming Zone		No		
Height of weather deck	m	2.794		
Height of Chine	m	0.467		
Height above Base	m	1.629		
Distance FWD of AP	m	9.752		
Design Pressure	kN/m2	27.719	*27.719*	
Vertical distance of underside of keel above baseline, zk	m	-0.230		
Mean deadrise angle of bottom plating at location	deg	25.000		
Mean deadrise angle of side plating at local section	deg	85.000		

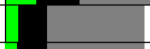
XPly

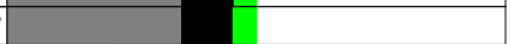
Ply Description	Actual Stress N/mm2	Allowable Stress N/mm2	Ultimate Stress N/mm2	Stress Fraction	C < > T
EQX 820	*-27.822*	-38.128	*-127.094*	*0.219*	
EQX 820	*-26.797*	-38.128	*-127.094*	*0.211*	
E-BX 810	*-10.702*	-21.513	*-71.709*	*0.149*	
E-BX 810	*-10.282*	-21.513	*-71.709*	*0.143*	
Airex C70.75	*-0.098*	-0.330	*-1.100*	*0.090*	
Airex C70.75	*0.048*	0.480	*1.600*	*0.030*	
E-BX 996	*8.090*	21.513	*71.709*	*0.113*	
EQX 820	*20.507*	38.128	*127.094*	*0.161*	
EQX 820	*21.532*	38.128	*127.094*	*0.169*	
E-BX 910	*9.372*	21.513	*71.709*	*0.131*	
EBX/MAT 600/100	*14.010*	29.790	*99.299*	*0.141*	

7.2.3 Fr - 13.5_Plate

Property	Units	Entered	Derived	Required
Base Width of Stiffener	mm	20.000		
Inner Skin Thickness	mm	2.416		
Outer Skin Thickness	mm	3.190		
Weight of inner skin	g/m2	3260.000		3194.067
Weight of outer skin	g/m2	4256.000		4237.028
Direct Core Shear Stress	N/mm2	0.417		0.450
Bending Moment	Nm	7.369		
Poisson's Ratio		0.000		
Deflection	mm	6.975		9.600
Wrinkling Stress for inner skin	N/mm2	22.280		44.596
Wrinkling Stress for outer skin	N/mm2	8.964		43.900
X-ply rule compliance		PASS		
Thickness	mm	30.606		
Curvature	mm	3.000		
Panel Breadth	mm	960.000		
Panel Length	mm	980.000		
Panel Aspect Ratio		1.021		
Stiffener Spacing	mm	980.000		
Neutral Axis	mm	14.037		
Stiffness	N cm4/mm2	14587.699		
Test At	mm	400.000		
Layup		T/S_C70.75 x 25		
Slamming Zone		No		
Height of weather deck	m	2.548		
Height of Chine	m	0.292		
Height above Base	m	0.763		
Distance FWD of AP	m	13.624		
Design Pressure	kN/m2	35.168	*35.168*	
Vertical distance of underside of keel above baseline, zk	m	-0.222		
Mean deadrise angle of bottom plating at location	deg	28.000		
Mean deadrise angle of side plating at local section	deg	84.000		

XPly

Ply Description	Actual Stress N/mm2	Allowable Stress N/mm2	Ultimate Stress N/mm2	Stress Fraction	C < > T
EQX 820	*16.146*	38.128	*127.094*	*0.127*	
EQX 820	*15.553*	38.128	*127.094*	*0.122*	
E-BX 810	*6.212*	21.513	*71.709*	*0.087*	
E-BX 810	*5.970*	21.513	*71.709*	*0.083*	
Airex C70.75	*0.036*	0.480	*1.600*	*0.022*	

Ply Description	Actual Stress N/mm2	Allowable Stress N/mm2	Ultimate Stress N/mm2	Stress Fraction	C < > T
Airex C70.75	*-0.044*	-0.330	*-1.100*	*0.040*	
E-BX 996	*-4.652*	-21.513	*-71.709*	*0.065*	
EQX 820	*-11.795*	-38.128	*-127.094*	*0.093*	
EQX 820	*-12.387*	-38.128	*-127.094*	*0.097*	
E-BX 910	*-5.393*	-21.513	*-71.709*	*0.075*	
EBX/MAT 600/100	*-8.064*	-29.790	*-99.299*	*0.081*	

7.2.4 Fr.10_OB_Trans.Web.Frm

Property	Units	Entered	Derived	Required
Shear Stress	N/mm2	11.101		25.740
Deflection	mm	2.357		10.500
Web Thickness	mm	4.200		3.849
Effective Span	m	2.100		
Stiffener Spacing	mm	968.000		
Width of Attached Plate	mm	262.120		
Bending Moment	Nm	-4895.387		
Profile		Top Hat_150 x150		
X-ply rule compliance		PASS		
Neutral Axis	mm	82.606		
Stiffness	N cm4/mm2	28619485.940		
Test At	mm	0.000		
Layup		T/S_C70.75 x 25		
Height of weather deck	m	2.794		
Height of Chine	m	0.467		
Height above Base	m	1.680		
Distance FWD of AP	m	10.230		
Design Pressure	kN/m2	13.761	*13.761*	
Vertical distance of underside of keel above baseline, zk	m	-0.230		
Mean deadrise angle of bottom plating at location	deg	25.000		
Mean deadrise angle of side plating at local section	deg	85.000		

XPly

Ply Description	Actual Stress N/mm2	Allowable Stress N/mm2	Ultimate Stress N/mm2	Stress Fraction	C < > T
E-BX 600	-19.679	-34.116	-103.381	0.190	
E-BX 600	-19.566	-34.116	-103.381	0.189	
EUD600	-32.508	-63.657	-192.900	0.169	
E-BX 600	-19.341	-34.116	-103.381	0.187	
EUD600	-32.131	-63.657	-192.900	0.167	
E-BX 600	-19.115	-34.116	-103.381	0.185	
EUD600	-31.754	-63.657	-192.900	0.165	
E-BX 600	-18.889	-34.116	-103.381	0.183	
EUD600	-31.376	-63.657	-192.900	0.163	
E-BX 600	-18.663	-34.116	-103.381	0.181	
E-BX 600	-18.551	-34.116	-103.381	0.179	
EQX 820	17.158	41.941	127.094	0.135	
EQX 820	17.358	41.941	127.094	0.137	
E-BX 810	7.291	23.664	71.709	0.102	
E-BX 810	7.373	23.664	71.709	0.103	
Airex C70.75	0.047	0.528	1.600	0.029	
E-BX 996	10.881	23.664	71.709	0.152	
EQX 820	26.418	41.941	127.094	0.208	
EQX 820	26.619	41.941	127.094	0.209	
E-BX 910	11.137	23.664	71.709	0.155	
EBX/MAT 600/100	15.932	32.769	99.299	0.160	

7.3 O/B TOPSIDE – B

7.3.1 Fr - 0.5_Plate B

Property	Units	Entered	Derived	Required
Base Width of Stiffener	mm	100.000		
Inner Skin Thickness	mm	2.416		
Outer Skin Thickness	mm	3.190		
Weight of inner skin	g/m2	3260.000		3194.067
Weight of outer skin	g/m2	4256.000		4237.028
Direct Core Shear Stress	N/mm2	0.326		0.450
Bending Moment	Nm	-12.066		
Poisson's Ratio		0.000		
Deflection	mm	6.034		9.380
Wrinkling Stress for inner skin	N/mm2	17.829		44.596
Wrinkling Stress for outer skin	N/mm2	8.884		43.900
X-ply rule compliance		PASS		
Thickness	mm	30.606		
Curvature	mm	8.000		
Panel Breadth	mm	938.000		
Panel Length	mm	1311.000		
Panel Aspect Ratio		1.398		
Stiffener Spacing	mm	1038.000		
Neutral Axis	mm	14.099		
Stiffness	N cm4/mm2	14602.993		
Test At	mm	0.000		
Layup		T/S_C70.75 x 25		
Slamming Zone		No		
Height of weather deck	m	2.548		
Height of Chine	m	0.209		
Height above Base	m	1.918		
Distance FWD of AP	m	0.519		
Design Pressure	kN/m2	23.918	*23.918*	
Vertical distance of underside of keel above baseline, zk	m	-0.010		
Mean deadrise angle of bottom plating at location	deg	12.000		
Mean deadrise angle of side plating at local section	deg	87.000		

XPly

Ply Description	Actual Stress N/mm2	Allowable Stress N/mm2	Ultimate Stress N/mm2	Stress Fraction	C < > T
EQX 820	-26.310	-38.128	-127.094	0.207	
EQX 820	-25.341	-38.128	-127.094	0.199	
E-BX 810	-10.120	-21.513	-71.709	0.141	
E-BX 810	-9.723	-21.513	-71.709	0.136	
Airex C70.75	-0.093	-0.330	-1.100	0.085	
Airex C70.75	0.045	0.480	1.600	0.028	
E-BX 996	7.650	21.513	71.709	0.107	
EQX 820	19.393	38.128	127.094	0.153	
EQX 820	20.362	38.128	127.094	0.160	
E-BX 910	8.863	21.513	71.709	0.124	
EBX/MAT 600/100	13.249	29.790	99.299	0.133	

7.3.2 Fr - 13.5_Plate

Property	Units	Entered	Derived	Required
Base Width of Stiffener	mm	20.000		
Inner Skin Thickness	mm	2.416		
Outer Skin Thickness	mm	3.190		
Weight of inner skin	g/m2	3260.000		3194.067
Weight of outer skin	g/m2	4256.000		4237.028
Direct Core Shear Stress	N/mm2	0.370		0.450
Bending Moment	Nm	7.886		
Poisson's Ratio		0.000		
Deflection	mm	6.939		9.480
Wrinkling Stress for inner skin	N/mm2	22.081		44.596
Wrinkling Stress for outer skin	N/mm2	8.890		43.900
X-ply rule compliance		PASS		
Thickness	mm	30.606		
Curvature	mm	3.000		
Panel Breadth	mm	948.000		
Panel Length	mm	1267.000		
Panel Aspect Ratio		1.336		
Stiffener Spacing	mm	968.000		
Neutral Axis	mm	14.037		
Stiffness	N cm4/mm2	14587.699		
Test At	mm	450.000		
Layup		T/S_C70.75 x 25		
Slamming Zone		No		
Height of weather deck	m	2.548		
Height of Chine	m	0.292		
Height above Base	m	1.917		
Distance FWD of AP	m	13.624		
Design Pressure	kN/m2	27.581	*27.581*	
Vertical distance of underside of keel above baseline, zk	m	-0.222		
Mean deadrise angle of bottom plating at location	deg	85.000		
Mean deadrise angle of side plating at local section	deg	28.000		

XPly

Ply Description	Actual Stress N/mm2	Allowable Stress N/mm2	Ultimate Stress N/mm2	Stress Fraction	C < > T
EQX 820	*17.278*	38.128	*127.094*	*0.136*	
EQX 820	*16.644*	38.128	*127.094*	*0.131*	
E-BX 810	*6.648*	21.513	*71.709*	*0.093*	
E-BX 810	*6.388*	21.513	*71.709*	*0.089*	
Airex C70.75	*0.038*	0.480	*1.600*	*0.024*	
Airex C70.75	*-0.047*	-0.330	*-1.100*	*0.043*	
E-BX 996	*-4.978*	-21.513	*-71.709*	*0.069*	
EQX 820	*-12.622*	-38.128	*-127.094*	*0.099*	
EQX 820	*-13.256*	-38.128	*-127.094*	*0.104*	
E-BX 910	*-5.771*	-21.513	*-71.709*	*0.080*	
EBX/MAT 600/100	*-8.630*	-29.790	*-99.299*	*0.087*	

7.4 WET DECK ANGLE

7.4.1 Fr - 0.5_Plate

Property	Units	Entered	Derived	Required
Base Width of Stiffener	mm	20.000		
Inner Skin Thickness	mm	1.808		
Outer Skin Thickness	mm	2.540		
Weight of inner skin	g/m2	2440.000		2388.779
Weight of outer skin	g/m2	3260.000		3168.788
Direct Core Shear Stress	N/mm2	0.213		0.450
Bending Moment	Nm	4.204		
Poisson's Ratio		0.000		
Deflection	mm	1.826		6.040
Wrinkling Stress for inner skin	N/mm2	11.380		42.448
Wrinkling Stress for outer skin	N/mm2	4.452		45.302
X-ply rule compliance		PASS		
Thickness	mm	39.348		
Curvature	mm	0.000		
Panel Breadth	mm	604.000		
Panel Length	mm	1038.000		
Panel Aspect Ratio		1.719		
Stiffener Spacing	mm	624.000		
Neutral Axis	mm	15.291		
Stiffness	N cm4/mm2	18867.255		
Test At	mm	300.000		
Layup		X/D_C70.75 x 35		
Protected		Yes		
Height above Base	m	1.360		
Distance FWD of AP	m	0.519		
Design Pressure	kN/m2	28.844	*28.844*	
Vertical distance of underside of keel above baseline, zk	m	-0.010		
Slamming Zone		No		

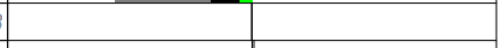
XPly

Ply Description	Actual Stress N/mm2	Allowable Stress N/mm2	Ultimate Stress N/mm2	Stress Fraction	C < > T
EQX 820	*10.339*	38.128	*127.094*	*0.081*	
E-BX 810	*4.185*	21.513	*71.709*	*0.058*	
E-BX 810	*4.078*	21.513	*71.709*	*0.057*	
Airex C70.75	*0.025*	0.480	*1.600*	*0.015*	
Airex C70.75	*-0.023*	-0.330	*-1.100*	*0.021*	
EQX 820	*-5.741*	-38.128	*-127.094*	*0.045*	
EQX 820	*-6.003*	-38.128	*-127.094*	*0.047*	
E-BX 910	*-2.602*	-21.513	*-71.709*	*0.036*	
EBX/MAT 600/100	*-3.875*	-29.790	*-99.299*	*0.039*	

7.4.2 Fr - 13.5_Plate

Property	Units	Entered	Derived	Required
Base Width of Stiffener	mm	20.000		
Inner Skin Thickness	mm	1.808		
Outer Skin Thickness	mm	2.540		
Weight of inner skin	g/m2	2440.000		2388.779
Weight of outer skin	g/m2	3260.000		3168.788
Direct Core Shear Stress	N/mm2	0.208		0.450
Bending Moment	Nm	-6.845		
Poisson's Ratio		0.000		
Deflection	mm	1.566		5.550
Wrinkling Stress for inner skin	N/mm2	10.184		42.448
Wrinkling Stress for outer skin	N/mm2	4.016		45.302
X-ply rule compliance		PASS		
Thickness	mm	39.348		
Curvature	mm	0.000		
Panel Breadth	mm	555.000		
Panel Length	mm	964.000		
Panel Aspect Ratio		1.737		
Stiffener Spacing	mm	575.000		
Neutral Axis	mm	15.455		
Stiffness	N cm4/mm2	18955.040		
Test At	mm	0.000		
Layup		X/D_C70.75 x 35		
Protected		Yes		
Height above Base	m	1.400		
Distance FWD of AP	m	13.624		
Design Pressure	kN/m2	30.431	*30.431*	
Vertical distance of underside of keel above baseline, zk	m	-0.222		
Slamming Zone		No		

XPly

Ply Description	Actual Stress N/mm2	Allowable Stress N/mm2	Ultimate Stress N/mm2	Stress Fraction	C < > T
EQX 820	*-16.644*	-38.128	*-127.094*	*0.131*	
E-BX 810	*-6.735*	-21.513	*-71.709*	*0.094*	
E-BX 810	*-6.562*	-21.513	*-71.709*	*0.092*	
Airex C70.75	*-0.064*	-0.330	*-1.100*	*0.058*	
Airex C70.75	*0.023*	0.480	*1.600*	*0.015*	
EQX 820	*9.420*	38.128	*127.094*	*0.074*	
EQX 820	*9.844*	38.128	*127.094*	*0.077*	
E-BX 910	*4.266*	21.513	*71.709*	*0.059*	
EBX/MAT 600/100	*6.347*	29.790	*99.299*	*0.064*	

7.4.3 Wet_Deck_Trans.Frm_(C)

Property	Units	Entered	Derived	Required
Shear Stress	N/mm2	0.000		25.740
Deflection	mm	0.000		0.000
Web Thickness	mm	3.660		2.857
Effective Span	m	0.000		
Stiffener Spacing	mm	0.000		
Width of Attached Plate	mm	0.000		
Bending Moment	Nm	0.000		
Profile		Top Hat_150 x100		
X-ply rule compliance		PASS		
Neutral Axis	mm	105.953		
Stiffness	N cm4/mm2	4721232.915		
Test At	mm	0.000		
Layup		X/D_C70.75 x 35		
Protected		Yes		
Height above Base	m	0.000		
Distance FWD of AP	m	0.000		
Design Pressure	kN/m2	22.353	*22.353*	
Vertical distance of underside of keel above baseline, zk	m	0.000		

XPly

Ply Description	Actual Stress N/mm2	Allowable Stress N/mm2	Ultimate Stress N/mm2	Stress Fraction	C < > T
E-BX 600	*0.000*	-34.116	*-103.381*	*0.000*	
EUD600	*0.000*	-63.657	*-192.900*	*0.000*	
E-BX 600	*0.000*	-34.116	*-103.381*	*0.000*	
EUD600	*0.000*	-63.657	*-192.900*	*0.000*	
E-BX 600	*0.000*	-34.116	*-103.381*	*0.000*	
EUD600	*0.000*	-63.657	*-192.900*	*0.000*	
E-BX 600	*0.000*	-34.116	*-103.381*	*0.000*	
EUD600	*0.000*	-63.657	*-192.900*	*0.000*	
E-BX 600	*0.000*	-34.116	*-103.381*	*0.000*	
E-BX 600	*0.000*	-34.116	*-103.381*	*0.000*	
EQX 820	*0.000*	-41.941	*-127.094*	*0.000*	
E-BX 810	*0.000*	-23.664	*-71.709*	*0.000*	
E-BX 810	*0.000*	-23.664	*-71.709*	*0.000*	
Airex C70.75	*0.000*	-0.363	*-1.100*	*0.000*	
EQX 820	*0.000*	-41.941	*-127.094*	*0.000*	
EQX 820	*0.000*	-41.941	*-127.094*	*0.000*	
E-BX 910	*0.000*	-23.664	*-71.709*	*0.000*	
EBX/MAT 600/100	*0.000*	-32.769	*-99.299*	*0.000*	

7.5 WET DECK FLAT

7.5.1 Fr - 0.5_Plate

Property	Units	Entered	Derived	Required
Base Width of Stiffener	mm	20.000		
Inner Skin Thickness	mm	1.808		
Outer Skin Thickness	mm	2.540		
Weight of inner skin	g/m2	2440.000		2388.779
Weight of outer skin	g/m2	3260.000		3168.788
Direct Core Shear Stress	N/mm2	0.323		0.450
Bending Moment	Nm	10.419		
Poisson's Ratio		0.000		
Deflection	mm	7.008		10.180
Wrinkling Stress for inner skin	N/mm2	29.303		42.448
Wrinkling Stress for outer skin	N/mm2	11.043		45.302
X-ply rule compliance		PASS		
Thickness	mm	39.348		
Curvature	mm	0.000		
Panel Breadth	mm	1018.000		
Panel Length	mm	1662.000		
Panel Aspect Ratio		1.633		
Stiffener Spacing	mm	1038.000		
Neutral Axis	mm	15.291		
Stiffness	N cm4/mm2	18867.255		
Test At	mm	500.000		
Layup		X/D_C70.75 x 35		
Protected		Yes		
Height above Base	m	1.564		
Distance FWD of AP	m	0.519		
Design Pressure	kN/m2	26.766	*26.766*	
Vertical distance of underside of keel above baseline, zk	m	-0.010		
Slamming Zone		No		

XPly

Ply Description	Actual Stress N/mm2	Allowable Stress N/mm2	Ultimate Stress N/mm2	Stress Fraction	C < > T
EQX 820	*25.626*	38.128	*127.094*	*0.202*	
E-BX 810	*10.372*	21.513	*71.709*	*0.145*	
E-BX 810	*10.107*	21.513	*71.709*	*0.141*	
Airex C70.75	*0.061*	0.480	*1.600*	*0.038*	
Airex C70.75	*-0.056*	-0.330	*-1.100*	*0.051*	
EQX 820	*-14.231*	-38.128	*-127.094*	*0.112*	
EQX 820	*-14.878*	-38.128	*-127.094*	*0.117*	
E-BX 910	*-6.451*	-21.513	*-71.709*	*0.090*	
EBX/MAT 600/100	*-9.604*	-29.790	*-99.299*	*0.097*	

7.5.2 Fr - 10.5_Plate

Property	Units	Entered	Derived	Required
Base Width of Stiffener	mm	0.000		
Inner Skin Thickness	mm	1.808		
Outer Skin Thickness	mm	2.540		
Weight of inner skin	g/m2	2440.000		2388.779
Weight of outer skin	g/m2	3260.000		3168.788
Direct Core Shear Stress	N/mm2	0.322		0.450
Bending Moment	Nm	5.392		
Poisson's Ratio		0.000		
Deflection	mm	6.307		9.680
Wrinkling Stress for inner skin	N/mm2	28.325		42.448
Wrinkling Stress for outer skin	N/mm2	10.081		45.302
X-ply rule compliance		PASS		
Thickness	mm	39.348		
Curvature	mm	0.000		
Panel Breadth	mm	968.000		
Panel Length	mm	1600.000		
Panel Aspect Ratio		1.653		
Stiffener Spacing	mm	968.000		
Neutral Axis	mm	15.291		
Stiffness	N cm4/mm2	18867.255		
Test At	mm	300.000		
Layup		X/D_C70.75 x 35		
Protected		Yes		
Height above Base	m	1.564		
Distance FWD of AP	m	9.752		
Design Pressure	kN/m2	27.815	*27.815*	
Vertical distance of underside of keel above baseline, zk	m	-0.230		
Slamming Zone		No		

XPly

Ply Description	Actual Stress N/mm2	Allowable Stress N/mm2	Ultimate Stress N/mm2	Stress Fraction	C < > T
EQX 820	*13.262*	38.128	*127.094*	*0.104*	
E-BX 810	*5.368*	21.513	*71.709*	*0.075*	

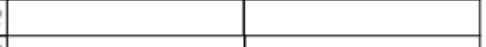
Ply Description	Actual Stress N/mm2	Allowable Stress N/mm2	Ultimate Stress N/mm2	Stress Fraction	C < > T
E-BX 810	*5.231*	21.513	*71.709*	*0.073*	
Airex C70.75	*0.032*	0.480	*1.600*	*0.020*	
Airex C70.75	*-0.029*	-0.330	*-1.100*	*0.027*	
EQX 820	*-7.365*	-38.128	*-127.094*	*0.058*	
EQX 820	*-7.700*	-38.128	*-127.094*	*0.061*	
E-BX 910	*-3.338*	-21.513	*-71.709*	*0.047*	
EBX/MAT 600/100	*-4.970*	-29.790	*-99.299*	*0.050*	

7.5.3 Fr - 13.5_Plate

Fr - 13.5_Plate

Property	Units	Entered	Derived	Required
Base Width of Stiffener	mm	10.000		
Inner Skin Thickness	mm	2.416		
Outer Skin Thickness	mm	2.540		
Weight of inner skin	g/m2	3260.000		2388.779
Weight of outer skin	g/m2	3260.000		3168.788
Direct Core Shear Stress	N/mm2	0.356		0.450
Bending Moment	Nm	-20.995		
Poisson's Ratio		0.000		
Deflection	mm	6.037		9.580
Wrinkling Stress for inner skin	N/mm2	23.150		44.596
Wrinkling Stress for outer skin	N/mm2	11.355		45.302
X-ply rule compliance		PASS		
Thickness	mm	39.956		
Curvature	mm	0.000		
Panel Breadth	mm	958.000		
Panel Length	mm	1763.000		
Panel Aspect Ratio		1.840		
Stiffener Spacing	mm	968.000		
Neutral Axis	mm	19.404		
Stiffness	N cm4/mm2	24701.872		
Test At	mm	0.000		
Layup		X/D_C70.75 x 35 #1		
Protected		Yes		
Height above Base	m	1.564		
Distance FWD of AP	m	13.624		
Design Pressure	kN/m2	29.375	*29.375*	
Vertical distance of underside of keel above baseline, zk	m	-0.222		
Slamming zone		No		

XPly

Ply Description	Actual Stress N/mm2	Allowable Stress N/mm2	Ultimate Stress N/mm2	Stress Fraction	C < > T
EQX 820	*-33.695*	-38.128	*-127.094*	*0.265*	
EQX 820	*-32.698*	-38.128	*-127.094*	*0.257*	
E-BX 810	*-13.164*	-21.513	*-71.709*	*0.184*	
E-BX 810	*-12.755*	-21.513	*-71.709*	*0.178*	
Airex C70.75	*-0.123*	-0.330	*-1.100*	*0.112*	
Airex C70.75	*0.072*	0.480	*1.600*	*0.045*	
EQX 820	*28.646*	38.128	*127.094*	*0.225*	
EQX 820	*29.642*	38.128	*127.094*	*0.233*	
E-BX 910	*12.728*	21.513	*71.709*	*0.177*	
EBX/MAT 600/100	*18.756*	29.790	*99.299*	*0.189*	

7.5.4 Fr - 10.5_Trans.Web.Frm

Property	Units	Entered	Derived	Required
Shear Stress	N/mm2	8.804		25.740
Deflection	mm	0.867		10.667
Web Thickness	mm	4.200		3.849
Effective Span	m	1.600		
Stiffener Spacing	mm	990.000		
Width of Attached Plate	mm	236.960		
Bending Moment	Nm	-2958.186		
Profile		Top Hat_150 x150		
X-ply rule compliance		PASS		
Neutral Axis	mm	97.446		
Stiffness	N cm4/mm2	27301040.928		
Test At	mm	0.000		
Layup		X/D_C70.75 x 35		
Protected		Yes		
Height above Base	m	1.564		
Distance FWD of AP	m	10.230		
Design Pressure	kN/m2	14.007	*14.007*	
Vertical distance of underside of keel above baseline, zk	m	-0.230		

XPly

Ply Description	Actual Stress N/mm2	Allowable Stress N/mm2	Ultimate Stress N/mm2	Stress Fraction	C < > T
E-BX 600	*-11.739*	-34.116	*-103.381*	*0.114*	
E-BX 600	*-11.668*	-34.116	*-103.381*	*0.113*	
EUD600	*-19.378*	-63.657	*-192.900*	*0.100*	
E-BX 600	*-11.525*	-34.116	*-103.381*	*0.111*	
EUD600	*-19.139*	-63.657	*-192.900*	*0.099*	
E-BX 600	*-11.382*	-34.116	*-103.381*	*0.110*	
EUD600	*-18.900*	-63.657	*-192.900*	*0.098*	
E-BX 600	*-11.239*	-34.116	*-103.381*	*0.109*	
EUD600	*-18.661*	-63.657	*-192.900*	*0.097*	
E-BX 600	*-11.096*	-34.116	*-103.381*	*0.107*	
E-BX 600	*-11.024*	-34.116	*-103.381*	*0.107*	
EQX 820	*12.143*	41.941	*127.094*	*0.096*	
E-BX 810	*5.095*	23.664	*71.709*	*0.071*	
E-BX 810	*5.147*	23.664	*71.709*	*0.072*	
Airex C70.75	*0.032*	0.528	*1.600*	*0.020*	
EQX 820	*19.837*	41.941	*127.094*	*0.156*	
EQX 820	*19.964*	41.941	*127.094*	*0.157*	
E-BX 910	*8.343*	23.664	*71.709*	*0.116*	
EBX/MAT 600/100	*11.921*	32.769	*99.299*	*0.120*	

7.6 BOTTOM SHELL

7.6.1 Fr 10_Bottom_Shell_Plate

Property	Units	Entered	Derived	Required
Base Width of Stiffener	mm	200.000		
Bending Moment	Nm	-4.422		
Poisson's Ratio		0.000		
X-ply rule compliance		PASS		
Thickness	mm	10.780		6.600
Curvature	mm	15.000		
Panel Breadth	mm	250.000		
Panel Length	mm	900.000		
Panel Aspect Ratio		3.600		
Stiffener Spacing	mm	450.000		
Neutral Axis	mm	5.434		
Stiffness	N cm4/mm2	1411.783		
Test At	mm	0.000		
Layup		Mono.Btm		
Slamming Zone		Yes		
Below Tangential Point		Yes		
Height of Chine	m	0.467		
Height above Base	m	0.370		
Distance FWD of AP	m	9.752		
Design Pressure	kN/m2	107.379	*107.379*	
Vertical distance of underside of keel above baseline, zk	m	-0.230		
Mean deadrise angle of bottom plating at location	deg	25.000		
Mean deadrise angle of side plating at local section	deg	85.000		

XPly

Ply Description	Actual Stress N/mm2	Allowable Stress N/mm2	Ultimate Stress N/mm2	Stress Fraction	C < > T
EQX 820	-32.300	-35.586	-127.094	0.254	
EQX 820	-31.092	-35.586	-127.094	0.245	
E-LT 625	-38.764	-132.131	-471.895	0.082	
E-BX 810	-10.878	-20.079	-71.709	0.152	
E-BX 810	-8.846	-20.079	-71.709	0.123	
E-BX 996	-6.814	-20.079	-71.709	0.095	
E-BX 996	-4.355	-20.079	-71.709	0.061	
E-BX 996	-1.896	-20.079	-71.709	0.026	
E-BX 996	0.563	20.079	71.709	0.008	
E-BX 996	3.022	20.079	71.709	0.042	
E-BX 996	5.481	20.079	71.709	0.076	
EQX 820	18.153	35.586	127.094	0.143	
EQX 820	23.108	35.586	127.094	0.182	
E-BX 910	11.879	20.079	71.709	0.166	
EBX/MAT 600/100	19.360	27.804	99.299	0.195	

7.6.2 Fr - 5_Bottom_Engine Girder

Property	Units	Entered	Derived	Required
Shear Stress	N/mm2	8.833		25.740
Deflection	mm	4.355		20.500
Web Thickness	mm	8.400		8.214
Effective Span	m	4.100		
Stiffener Spacing	mm	500.000		
Width of Attached Plate	mm	500.000		
Bending Moment	Nm	-37604.868		
Profile		Top Hat_200 x 300		
X-ply rule compliance		PASS		
Neutral Axis	mm	146.029		
Stiffness	N cm4/mm2	453559677.179		
Test At	mm	0.000		
Layup		Mono.Btm		
Below Tangential Point		Yes		
Height of Chine	m	0.467		
Height above Base	m	0.479		
Distance FWD of AP	m	10.944		
Design Pressure	kN/m2	53.689	*53.689*	
Vertical distance of underside of keel above baseline, zk	m	-0.230		
Mean deadrise angle of bottom plating at location	deg	25.000		
Mean deadrise angle of side plating at local section	deg	85.000		

XPly

Ply Description	Actual Stress N/mm2	Allowable Stress N/mm2	Ultimate Stress N/mm2	Stress Fraction	C < > T
EUD600	-38.151	-63.657	-192.900	0.198	
E-BX 600	-22.776	-34.116	-103.381	0.220	
E-BX 600	-22.721	-34.116	-103.381	0.220	
E-BX 600	-22.666	-34.116	-103.381	0.219	
EUD600	-37.785	-63.657	-192.900	0.196	
E-BX 600	-22.557	-34.116	-103.381	0.218	
EUD600	-37.602	-63.657	-192.900	0.195	
E-BX 600	-22.447	-34.116	-103.381	0.217	
EUD600	-37.419	-63.657	-192.900	0.194	
E-BX 600	-22.338	-34.116	-103.381	0.216	
EUD600	-37.237	-63.657	-192.900	0.193	
E-BX 600	-22.228	-34.116	-103.381	0.215	
EUD600	-37.054	-63.657	-192.900	0.192	
E-BX 600	-22.119	-34.116	-103.381	0.214	
EUD600	-36.871	-63.657	-192.900	0.191	
E-BX 600	-22.010	-34.116	-103.381	0.213	
EUD600	-36.688	-63.657	-192.900	0.190	
E-BX 600	-21.900	-34.116	-103.381	0.212	
EUD600	-36.505	-63.657	-192.900	0.189	
E-BX 600	-21.791	-34.116	-103.381	0.211	
EUD600	-36.322	-63.657	-192.900	0.188	
E-BX 600	-21.681	-34.116	-103.381	0.210	
EUD600	-36.139	-63.657	-192.900	0.187	
E-BX 600	-21.572	-34.116	-103.381	0.209	

E-BX 600	*-21.572*	-34.116	*-103.381*	*0.209*	
EUD600	*-35.957*	-63.657	*-192.900*	*0.186*	
E-BX 600	*-21.462*	-34.116	*-103.381*	*0.208*	
EQX 820	*21.631*	41.941	*127.094*	*0.170*	
EQX 820	*21.663*	41.941	*127.094*	*0.170*	
E-LT 625	*28.143*	155.725	*471.895*	*0.060*	
E-BX 810	*9.049*	23.664	*71.709*	*0.126*	
E-BX 810	*9.103*	23.664	*71.709*	*0.127*	
E-BX 996	*9.157*	23.664	*71.709*	*0.128*	
E-BX 996	*9.222*	23.664	*71.709*	*0.129*	
E-BX 996	*9.287*	23.664	*71.709*	*0.130*	
E-BX 996	*9.352*	23.664	*71.709*	*0.130*	
E-BX 996	*9.417*	23.664	*71.709*	*0.131*	
EQX 820	*22.835*	41.941	*127.094*	*0.180*	
EQX 820	*22.966*	41.941	*127.094*	*0.181*	
E-BX 910	*9.591*	23.664	*71.709*	*0.134*	
EBX/MAT 600/100	*13.704*	32.769	*99.299*	*0.138*	

7.6.3 Fr.10_Bottom_Long.Pri.Stf_(C)

Property	Units	Entered	Derived	Required
Shear Stress	N/mm2	8.833		25.740
Deflection	mm	4.355		20.500
Web Thickness	mm	8.400		8.214
Effective Span	m	4.100		
Stiffener Spacing	mm	500.000		
Width of Attached Plate	mm	500.000		
Bending Moment	Nm	-37604.868		
Profile		Top Hat_200 x 300		
X-ply rule compliance		PASS		
Neutral Axis	mm	146.029		
Stiffness	N cm4/mm2	453559677.179		
Test At	mm	0.000		
Layup		Mono.Btm		
Below Tangential Point		Yes		
Height of Chine	m	0.467		
Height above Base	m	0.479		
Distance FWD of AP	m	10.944		
Design Pressure	kN/m2	53.689	*53.689*	
Vertical distance of underside of keel above baseline, zk	m	-0.230		
Mean deadrise angle of bottom plating at location	deg	25.000		
Mean deadrise angle of side plating at local section	deg	85.000		

XPly

Ply Description	Actual Stress N/mm2	Allowable Stress N/mm2	Ultimate Stress N/mm2	Stress Fraction	C < > T
EUD600	-38.151	-63.657	-192.900	0.198	
E-BX 600	-22.776	-34.116	-103.381	0.220	
E-BX 600	-22.721	-34.116	-103.381	0.220	
E-BX 600	-22.666	-34.116	-103.381	0.219	
EUD600	-37.785	-63.657	-192.900	0.196	
E-BX 600	-22.557	-34.116	-103.381	0.218	
EUD600	-37.602	-63.657	-192.900	0.195	
E-BX 600	-22.447	-34.116	-103.381	0.217	
EUD600	-37.419	-63.657	-192.900	0.194	
E-BX 600	-22.338	-34.116	-103.381	0.216	
EUD600	-37.237	-63.657	-192.900	0.193	
E-BX 600	-22.228	-34.116	-103.381	0.215	
EUD600	-37.054	-63.657	-192.900	0.192	
E-BX 600	-22.119	-34.116	-103.381	0.214	
EUD600	-36.871	-63.657	-192.900	0.191	
E-BX 600	-22.010	-34.116	-103.381	0.213	
EUD600	-36.688	-63.657	-192.900	0.190	
E-BX 600	-21.900	-34.116	-103.381	0.212	
EUD600	-36.505	-63.657	-192.900	0.189	
E-BX 600	-21.791	-34.116	-103.381	0.211	
EUD600	-36.322	-63.657	-192.900	0.188	
E-BX 600	-21.681	-34.116	-103.381	0.210	
EUD600	-36.139	-63.657	-192.900	0.187	
E-BX 600	-21.572	-34.116	-103.381	0.209	
EUD600	-35.957	-63.657	-192.900	0.186	
E-BX 600	-21.462	-34.116	-103.381	0.208	
EQX 820	21.631	41.941	127.094	0.170	
EQX 820	21.663	41.941	127.094	0.170	
E-LT 625	28.143	155.725	471.895	0.060	

7.6.4 Fr - 15.5_Bottom_Long.Pri.Stff

Property	Units	Entered	Derived	Required
Shear Stress	N/mm2	10.839		25.740
Deflection	mm	3.677		15.785
Web Thickness	mm	7.200		5.635
Effective Span	m	3.157		
Stiffener Spacing	mm	500.000		
Width of Attached Plate	mm	500.000		
Bending Moment	Nm	-19815.987		
Profile		Top Hat_200 x 240		
X-ply rule compliance		PASS		
Neutral Axis	mm	92.811		
Stiffness	N cm4/mm2	167844401.887		
Test At	mm	0.000		
Layup		Mono.Btm		
Below Tangential Point		Yes		
Height of Chine	m	0.467		
Height above Base	m	0.479		
Distance FWD of AP	m	15.706		
Design Pressure	kN/m2	47.718	*47.718*	
Vertical distance of underside of keel above baseline, zk	m	-0.230		
Mean deadrise angle of bottom plating at location	deg	32.000		
Mean deadrise angle of side plating at local section	deg	84.000		

XPly

Ply Description	Actual Stress N/mm2	Allowable Stress N/mm2	Ultimate Stress N/mm2	Stress Fraction	C < > T
EUD600	-37.404	-63.657	-192.900	0.194	
E-BX 600	-22.305	-34.116	-103.381	0.216	
EUD600	-37.143	-63.657	-192.900	0.193	
E-BX 600	-22.149	-34.116	-103.381	0.214	
EUD600	-36.883	-63.657	-192.900	0.191	
E-BX 600	-21.994	-34.116	-103.381	0.213	
EUD600	-36.622	-63.657	-192.900	0.190	
E-BX 600	-21.838	-34.116	-103.381	0.211	
EUD600	-36.362	-63.657	-192.900	0.189	
E-BX 600	-21.682	-34.116	-103.381	0.210	
EUD600	-36.102	-63.657	-192.900	0.187	
E-BX 600	-21.526	-34.116	-103.381	0.208	
EUD600	-35.841	-63.657	-192.900	0.186	
E-BX 600	-21.370	-34.116	-103.381	0.207	
EUD600	-35.581	-63.657	-192.900	0.184	
E-BX 600	-21.214	-34.116	-103.381	0.205	

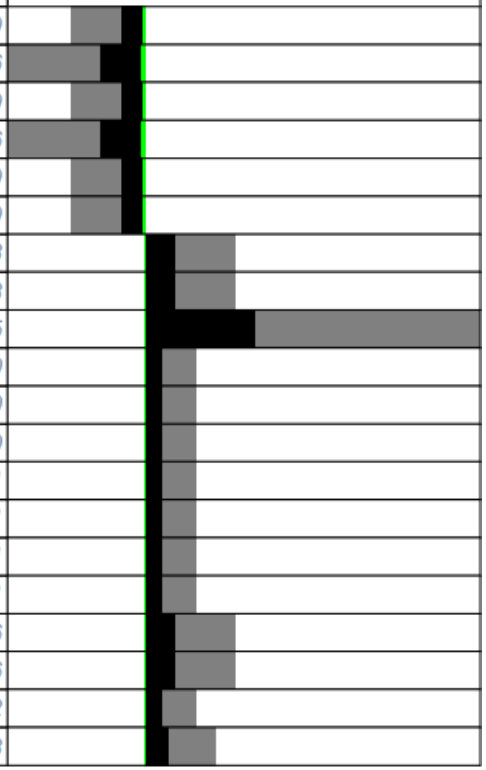
Ply Description	Actual Stress N/mm2	Allowable Stress N/mm2	Ultimate Stress N/mm2	Stress Fraction	C < > T
EUD600	-35.320	-63.657	-192.900	0.183	
E-BX 600	-21.059	-34.116	-103.381	0.204	
EUD600	-35.060	-63.657	-192.900	0.182	
E-BX 600	-20.903	-34.116	-103.381	0.202	
EUD600	-34.800	-63.657	-192.900	0.180	
E-BX 600	-20.747	-34.116	-103.381	0.201	
EUD600	-34.539	-63.657	-192.900	0.179	
E-BX 600	-20.591	-34.116	-103.381	0.199	
EQX 820	18.682	41.941	127.094	0.147	
EQX 820	18.727	41.941	127.094	0.147	
E-LT 625	24.352	155.725	471.895	0.052	
E-BX 810	7.853	23.664	71.709	0.110	
E-BX 810	7.930	23.664	71.709	0.111	
E-BX 996	8.006	23.664	71.709	0.112	
E-BX 996	8.099	23.664	71.709	0.113	
E-BX 996	8.192	23.664	71.709	0.114	
E-BX 996	8.284	23.664	71.709	0.116	
E-BX 996	8.377	23.664	71.709	0.117	
EQX 820	20.397	41.941	127.094	0.160	
EQX 820	20.584	41.941	127.094	0.162	
E-BX 910	8.625	23.664	71.709	0.120	
EBX/MAT 600/100	12.368	32.769	99.299	0.125	

7.6.5 Fr.10_Trans.Web.Frm

Property	Units	Entered	Derived	Required
Shear Stress	N/mm2	7.287		25.740
Deflection	mm	0.018		2.450
Web Thickness	mm	4.200		3.849
Effective Span	m	0.490		
Stiffener Spacing	mm	698.000		
Width of Attached Plate	mm	365.600		
Bending Moment	Nm	-749.815		
Profile		Top Hat_150 x150		
X-ply rule compliance		PASS		
Neutral Axis	mm	47.562		
Stiffness	N cm4/mm2	31793434.827		
Test At	mm	0.000		
Layup		Mono.Btm		
Below Tangential Point		Yes		
Height of Chine	m	0.467		
Height above Base	m	0.300		
Distance FWD of AP	m	10.230		
Design Pressure	kN/m2	53.689	*53.689*	
Vertical distance of underside of keel above baseline, zk	m	-0.230		
Mean deadrise angle of bottom plating at location	deg	25.000		
Mean deadrise angle of side plating at local section	deg	85.000		

XPly

Ply Description	Actual Stress N/mm2	Allowable Stress N/mm2	Ultimate Stress N/mm2	Stress Fraction	C < > T
E-BX 600	*-3.108*	-34.116	*-103.381*	*0.030*	
E-BX 600	*-3.093*	-34.116	*-103.381*	*0.030*	
EUD600	*-5.142*	-63.657	*-192.900*	*0.027*	
E-BX 600	*-3.061*	-34.116	*-103.381*	*0.030*	
EUD600	*-5.090*	-63.657	*-192.900*	*0.026*	

Ply Description	Actual Stress N/mm2	Allowable Stress N/mm2	Ultimate Stress N/mm2	Stress Fraction	C < > T
E-BX 600	-3.030	-34.116	-103.381	0.029	
EUD600	-5.038	-63.657	-192.900	0.026	
E-BX 600	-2.999	-34.116	-103.381	0.029	
EUD600	-4.986	-63.657	-192.900	0.026	
E-BX 600	-2.968	-34.116	-103.381	0.029	
E-BX 600	-2.952	-34.116	-103.381	0.029	
EQX 820	1.673	41.941	127.094	0.013	
EQX 820	1.682	41.941	127.094	0.013	
E-LT 625	2.194	155.725	471.895	0.005	
E-BX 810	0.714	23.664	71.709	0.010	
E-BX 810	0.729	23.664	71.709	0.010	
E-BX 996	0.745	23.664	71.709	0.010	
E-BX 996	0.763	23.664	71.709	0.011	
E-BX 996	0.782	23.664	71.709	0.011	
E-BX 996	0.800	23.664	71.709	0.011	
E-BX 996	0.819	23.664	71.709	0.011	
EQX 820	2.016	41.941	127.094	0.016	
EQX 820	2.053	41.941	127.094	0.016	
E-BX 910	0.868	23.664	71.709	0.012	
EBX/MAT 600/100	1.257	32.769	99.299	0.013	

7.7 BULKHEADS

7.7.1 Watertight_Bulkhead

Property	Units	Entered
Height of Bhd. Deck	m	2.794

7.7.1.1 Watertight_Bhd._Plate_(C)

Property	Units	Entered	Derived	Required
Base Width of Stiffener	mm	150.000		
Inner Skin Thickness	mm	2.170		
Outer Skin Thickness	mm	2.170		
Weight of inner skin	g/m2	2221.000		2104.882
Weight of outer skin	g/m2	2221.000		2104.882
Direct Core Shear Stress	N/mm2	0.272		0.315
Bending Moment	Nm	-6.453		
Poisson's Ratio		0.000		
Deflection	mm	5.096		15.240
Wrinkling Stress for inner skin	N/mm2	13.547		39.347
Wrinkling Stress for outer skin	N/mm2	10.589		39.347
X-ply rule compliance		PASS		
Thickness	mm	24.340		
Curvature	mm	0.000		
Panel Breadth	mm	762.000		
Panel Length	mm	2280.000		
Panel Aspect Ratio		2.992		
Stiffener Spacing	mm	912.000		
Neutral Axis	mm	12.187		
Stiffness	N cm4/mm2	7207.593		
Test At	mm	0.000		
Layup		BHD_C70.55 x 20		
Load Head	m	2.200		
Height above Base	m	1.500		
Distance FWD of AP	m	9.230		
Design Pressure	kN/m2	15.840	*15.840*	

XPly

Ply Description	Actual Stress N/mm2	Allowable Stress N/mm2	Ultimate Stress N/mm2	Stress Fraction	C < > T
E-BX 996	*-8.715*	-23.664	*-71.709*	*0.122*	
E-LT 625	*-25.098*	-155.725	*-471.895*	*0.053*	
E-BX 600	*-10.422*	-34.116	*-103.381*	*0.101*	
Airex C70.55	*-0.049*	-0.248	*-0.750*	*0.066*	
Airex C70.55	*0.031*	0.330	*1.000*	*0.031*	
E-BX 600	*10.454*	34.116	*103.381*	*0.101*	
E-LT 625	*25.173*	155.725	*471.895*	*0.053*	
E-BX 996	*8.739*	23.664	*71.709*	*0.122*	

7.7.1.2 Watertight_Bhd._Pri.Stf._(C)

Property	Units	Entered	Derived	Required
Shear Stress	N/mm2	14.960		31.200
Deflection	mm	4.533		14.667
Web Thickness	mm	4.200		3.849
Effective Span	m	2.200		
Stiffener Spacing	mm	850.000		
Width of Attached Plate	mm	480.702		
Bending Moment	Nm	-8293.824		
Profile		Top Hat_150 x150		
X-ply rule compliance		PASS		
Neutral Axis	mm	68.529		
Stiffness	N cm4/mm2	30749951.362		
Test At	mm	0.000		
Layup		BHD_C70.55 x 20		
Load Head	m	1.204		
Height above Base	m	1.590		
Distance FWD of AP	m	10.000		
Design Pressure	kN/m2	20.160	*8.669*	
Load Model		B		

XPly

Ply Description	Actual Stress N/mm2	Allowable Stress N/mm2	Ultimate Stress N/mm2	Stress Fraction	C < > T
E-BX 600	-33.348	-41.352	-103.381	0.323	
E-BX 600	-33.170	-41.352	-103.381	0.321	
EUD600	-55.132	-77.160	-192.900	0.286	
E-BX 600	-32.814	-41.352	-103.381	0.317	
EUD600	-54.537	-77.160	-192.900	0.283	
E-BX 600	-32.458	-41.352	-103.381	0.314	
EUD600	-53.942	-77.160	-192.900	0.280	
E-BX 600	-32.102	-41.352	-103.381	0.311	
EUD600	-53.347	-77.160	-192.900	0.277	
E-BX 600	-31.746	-41.352	-103.381	0.307	
E-BX 600	-31.568	-41.352	-103.381	0.305	
E-BX 996	9.547	28.684	71.709	0.133	
E-LT 625	30.465	188.758	471.895	0.065	
E-BX 600	13.575	41.352	103.381	0.131	
Airex C70.55	0.044	0.400	1.000	0.044	
E-BX 600	19.686	41.352	103.381	0.190	
E-LT 625	45.192	188.758	471.895	0.096	
E-BX 996	14.600	28.684	71.709	0.204	

7.7.2 Structural_Bulkhead

Property	Units	Entered
Height of Bhd. Deck	m	2.794

7.7.2.1 Watertight_Bhd._Plate_(C)

Property	Units	Entered	Derived	Required
Base Width of Stiffener	mm	150.000		
Inner Skin Thickness	mm	2.170		
Outer Skin Thickness	mm	2.170		
Weight of inner skin	g/m2	2221.000		2104.882
Weight of outer skin	g/m2	2221.000		2104.882
Direct Core Shear Stress	N/mm2	0.272		0.315
Bending Moment	Nm	-6.453		
Poisson's Ratio		0.000		
Deflection	mm	5.096		15.240
Wrinkling Stress for inner skin	N/mm2	13.547		39.347
Wrinkling Stress for outer skin	N/mm2	10.589		39.347
X-ply rule compliance		PASS		
Thickness	mm	24.340		
Curvature	mm	0.000		
Panel Breadth	mm	762.000		
Panel Length	mm	2280.000		
Panel Aspect Ratio		2.992		
Stiffener Spacing	mm	912.000		
Neutral Axis	mm	12.187		
Stiffness	N cm4/mm2	7207.593		
Test At	mm	0.000		
Layup		BHD_C70.55 x 20		
Load Head	m	2.200		
Height above Base	m	1.500		
Distance FWD of AP	m	9.230		
Design Pressure	kN/m2	15.840	*15.840*	

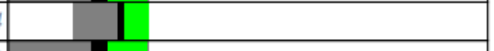
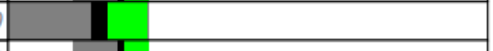
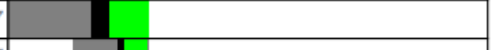
XPly

Ply Description	Actual Stress N/mm2	Allowable Stress N/mm2	Ultimate Stress N/mm2	Stress Fraction	C < > T
E-BX 996	*-8.715*	-23.664	*-71.709*	*0.122*	
E-LT 625	*-25.098*	-155.725	*-471.895*	*0.053*	
E-BX 600	*-10.422*	-34.116	*-103.381*	*0.101*	
Airex C70.55	*-0.049*	-0.248	*-0.750*	*0.066*	
Airex C70.55	*0.031*	0.330	*1.000*	*0.031*	
E-BX 600	*10.454*	34.116	*103.381*	*0.101*	
E-LT 625	*25.173*	155.725	*471.895*	*0.053*	
E-BX 996	*8.739*	23.664	*71.709*	*0.122*	

7.7.2.2 Watertight_Bhd._Pri.Stf._(C)

Property	Units	Entered	Derived	Required
Shear Stress	N/mm2	14.960		31.200
Deflection	mm	4.533		14.667
Web Thickness	mm	4.200		3.849
Effective Span	m	2.200		
Stiffener Spacing	mm	850.000		
Width of Attached Plate	mm	480.702		
Bending Moment	Nm	-8293.824		
Profile		Top Hat_150 x150		
X-ply rule compliance		PASS		
Neutral Axis	mm	68.529		
Stiffness	N cm4/mm2	30749951.362		
Test At	mm	0.000		
Layup		BHD_C70.55 x 20		
Load Head	m	1.204		
Height above Base	m	1.590		
Distance FWD of AP	m	10.000		
Design Pressure	kN/m2	20.160	*8.669*	
Load Model		B		

XPly

Ply Description	Actual Stress N/mm2	Allowable Stress N/mm2	Ultimate Stress N/mm2	Stress Fraction	C < > T
E-BX 600	*-33.348*	-41.352	*-103.381*	*0.323*	
E-BX 600	*-33.170*	-41.352	*-103.381*	*0.321*	
EUD600	*-55.132*	-77.160	*-192.900*	*0.286*	
E-BX 600	*-32.814*	-41.352	*-103.381*	*0.317*	
EUD600	*-54.537*	-77.160	*-192.900*	*0.283*	
E-BX 600	*-32.458*	-41.352	*-103.381*	*0.314*	
EUD600	*-53.942*	-77.160	*-192.900*	*0.280*	
E-BX 600	*-32.102*	-41.352	*-103.381*	*0.311*	
EUD600	*-53.347*	-77.160	*-192.900*	*0.277*	
E-BX 600	*-31.746*	-41.352	*-103.381*	*0.307*	
E-BX 600	*-31.568*	-41.352	*-103.381*	*0.305*	
E-BX 996	*9.547*	28.684	*71.709*	*0.133*	
E-LT 625	*30.465*	188.758	*471.895*	*0.065*	
E-BX 600	*13.575*	41.352	*103.381*	*0.131*	
Airex C70.55	*0.044*	0.400	*1.000*	*0.044*	
E-BX 600	*19.686*	41.352	*103.381*	*0.190*	

Ply Description	Actual Stress N/mm2	Allowable Stress N/mm2	Ultimate Stress N/mm2	Stress Fraction	C < > T
E-LT 625	*45.192*	188.758	*471.895*	*0.096*	
E-BX 996	*14.600*	28.684	*71.709*	*0.204*	

7.8 UPPER DECK

7.8.1 Fr. 10_Inner_Deck_Plate

Property	Units	Entered	Derived	Required
Base Width of Stiffener	mm	150.000		
Inner Skin Thickness	mm	1.650		
Outer Skin Thickness	mm	1.816		
Weight of inner skin	g/m2	2245.000		2151.106
Weight of outer skin	g/m2	2450.000		2151.106
Direct Core Shear Stress	N/mm2	0.125		0.450
Bending Moment	Nm	-3.979		
Poisson's Ratio		0.000		
Deflection	mm	2.294		8.400
Wrinkling Stress for inner skin	N/mm2	9.021		47.784
Wrinkling Stress for outer skin	N/mm2	6.212		51.202
X-ply rule compliance		PASS		
Thickness	mm	28.466		
Curvature	mm	0.000		
Panel Breadth	mm	840.000		
Panel Length	mm	1544.000		
Panel Aspect Ratio		1.838		
Stiffener Spacing	mm	990.000		
Neutral Axis	mm	12.377		
Stiffness	N cm4/mm2	8693.111		
Test At	mm	0.000		
Layup		W/D_C70.55 x 25		
Vertical Acceleration	g	0.640		
Distance FWD of AP	m	9.752		
Pressure exerted by the cargo, WCDP	kN/m2	0.000		
Design Pressure	kN/m2	8.406	*8.406*	
Height above Base	m	0.479		

XPly

Ply Description	Actual Stress N/mm2	Allowable Stress N/mm2	Ultimate Stress N/mm2	Stress Fraction	C < > T
E-BX 810	*-5.899*	-23.664	*-71.709*	*0.082*	
E-LT 625	*-17.742*	-155.725	*-471.895*	*0.038*	
E-BX 810	*-5.514*	-23.664	*-71.709*	*0.077*	
Airex C70.75	*-0.053*	-0.363	*-1.100*	*0.048*	
Airex C70.75	*0.024*	0.528	*1.600*	*0.015*	
EQX 820	*9.862*	41.941	*127.094*	*0.078*	
E-BX 810	*4.315*	23.664	*71.709*	*0.060*	
EQX 820	*10.929*	41.941	*127.094*	*0.086*	

7.8.2 Fr. 10_Deck Plate

Property	Units	Entered	Derived	Required
Base Width of Stiffener	mm	150.000		
Inner Skin Thickness	mm	1.650		
Outer Skin Thickness	mm	1.816		
Weight of inner skin	g/m2	2245.000		2151.106
Weight of outer skin	g/m2	2450.000		2388.779
Direct Core Shear Stress	N/mm2	0.347		0.450
Bending Moment	Nm	-11.071		
Poisson's Ratio		0.000		
Deflection	mm	6.578		8.400
Wrinkling Stress for inner skin	N/mm2	25.099		43.440
Wrinkling Stress for outer skin	N/mm2	17.283		46.547
X-ply rule compliance		PASS		
Thickness	mm	28.466		
Curvature	mm	0.000		
Panel Breadth	mm	840.000		
Panel Length	mm	2787.000		
Panel Aspect Ratio		3.318		
Stiffener Spacing	mm	990.000		
Neutral Axis	mm	12.377		
Stiffness	N cm4/mm2	8693.111		
Test At	mm	0.000		
Layup		W/D_C70.55 x 25		
Vertical Acceleration	g	0.640		
Distance FWD of AP	m	9.752		
Pressure exerted by the cargo, WCDP	t/m2	1.500		
Design Pressure	t/m2	2.250	*2.250*	
Height above Base	m	2.794		

XPly

Ply Description	Actual Stress N/mm2	Allowable Stress N/mm2	Ultimate Stress N/mm2	Stress Fraction	C < > T
E-BX 810	*-16.413*	-21.513	*-71.709*	*0.229*	
E-LT 625	*-49.360*	-141.569	*-471.895*	*0.105*	
E-BX 810	*-15.341*	-21.513	*-71.709*	*0.214*	
Airex C70.75	*-0.147*	-0.330	*-1.100*	*0.134*	
Airex C70.75	*0.067*	0.480	*1.600*	*0.042*	
EQX 820	*27.439*	38.128	*127.094*	*0.216*	
E-BX 810	*12.006*	21.513	*71.709*	*0.167*	
EQX 820	*30.406*	38.128	*127.094*	*0.239*	

7.8.3 Fr. 10_Pri.Stf

Property	Units	Entered	Derived	Required
Shear Stress	N/mm2	10.756		25.740
Deflection	mm	1.870		8.000
Web Thickness	mm	4.200		3.849
Effective Span	m	2.000		
Stiffener Spacing	mm	968.000		
Width of Attached Plate	mm	471.085		
Bending Moment	Nm	-4517.333		
Profile		Top Hat_150 x150		
X-ply rule compliance		PASS		
Neutral Axis	mm	76.080		
Stiffness	N cm4/mm2	30202701.952		
Test At	mm	0.000		
Layup		W/D_C70.55 x 25		
Vertical Acceleration	g	0.640		
Distance FWD of AP	m	9.752		
Pressure exerted by the cargo, WCDP	kN/m2	0.000		
Design Pressure	kN/m2	14.000	*7.000*	
Height above Base	m	2.768		

XPly

Ply Description	Actual Stress N/mm2	Allowable Stress N/mm2	Ultimate Stress N/mm2	Stress Fraction	C < > T
E-BX 600	-17.929	-34.116	-103.381	0.173	
E-BX 600	-17.830	-34.116	-103.381	0.172	
EUD600	-29.631	-63.657	-192.900	0.154	
E-BX 600	-17.633	-34.116	-103.381	0.171	
EUD600	-29.301	-63.657	-192.900	0.152	
E-BX 600	-17.436	-34.116	-103.381	0.169	
EUD600	-28.971	-63.657	-192.900	0.150	
E-BX 600	-17.238	-34.116	-103.381	0.167	
EUD600	-28.641	-63.657	-192.900	0.148	
E-BX 600	-17.041	-34.116	-103.381	0.165	
E-BX 600	-16.942	-34.116	-103.381	0.164	
E-BX 810	5.704	23.664	71.709	0.080	
E-LT 625	18.045	155.725	471.895	0.038	
E-BX 810	5.830	23.664	71.709	0.081	
Airex C70.75	0.037	0.528	1.600	0.023	
EQX 820	21.426	41.941	127.094	0.169	
E-BX 810	8.970	23.664	71.709	0.125	
EQX 820	21.775	41.941	127.094	0.171	

7.8.4 Fr.10_Upper DK_ Logitudinals

Property	Units	Entered	Derived	Required
Shear Stress	N/mm2	13.491		25.740
Deflection	mm	4.912		11.600
Web Thickness	mm	4.880		4.544
Effective Span	m	2.900		
Stiffener Spacing	mm	1200.000		
Width of Attached Plate	mm	648.306		
Bending Moment	Nm	-11774.000		
Profile		Top Hat_100 x 185		
X-ply rule compliance		PASS		
Neutral Axis	mm	91.166		
Stiffness	N cm4/mm2	62989870.131		
Test At	mm	0.000		
Layup		W/D_C70.55 x 25		
Vertical Acceleration	g	0.671		
Distance FWD of AP	m	10.449		
Pressure exerted by the cargo, WCDP	kN/m2	0.000		
Design Pressure	kN/m2	14.000	*7.000*	
Height above Base	m	5.100		

XPly

Ply Description	Actual Stress N/mm2	Allowable Stress N/mm2	Ultimate Stress N/mm2	Stress Fraction	C < > T
EUD600	-45.136	-63.657	-192.900	0.234	
E-BX 600	-26.887	-34.116	-103.381	0.260	
E-BX 600	-26.762	-34.116	-103.381	0.259	
EUD600	-44.511	-63.657	-192.900	0.231	
E-BX 600	-26.513	-34.116	-103.381	0.256	
EUD600	-44.095	-63.657	-192.900	0.229	
E-BX 600	-26.264	-34.116	-103.381	0.254	
EUD600	-43.680	-63.657	-192.900	0.226	
E-BX 600	-26.016	-34.116	-103.381	0.252	
EUD600	-43.264	-63.657	-192.900	0.224	
E-BX 600	-25.767	-34.116	-103.381	0.249	
EUD600	-42.848	-63.657	-192.900	0.222	
E-BX 600	-25.518	-34.116	-103.381	0.247	
EUD600	-42.433	-63.657	-192.900	0.220	
E-BX 600	-25.269	-34.116	-103.381	0.244	
E-BX 810	9.388	23.664	71.709	0.131	
E-LT 625	29.607	155.725	471.895	0.063	
E-BX 810	9.545	23.664	71.709	0.133	
Airex C70.75	0.060	0.528	1.600	0.038	
EQX 820	32.217	41.941	127.094	0.253	
E-BX 810	13.469	23.664	71.709	0.188	
EQX 820	32.652	41.941	127.094	0.257	

7.8.5 Fr.10_Upper DK_ Transverse

Property	Units	Entered	Derived	Required
Shear Stress	N/mm2	10.048		25.740
Deflection	mm	1.082		5.000
Web Thickness	mm	3.000		2.857
Effective Span	m	1.250		
Stiffener Spacing	mm	689.000		
Width of Attached Plate	mm	307.469		
Bending Moment	Nm	-1255.990		
Profile		Top Hat_100 x 100		
X-ply rule compliance		PASS		
Neutral Axis	mm	42.902		
Stiffness	N cm4/mm2	5665907.005		
Test At	mm	0.000		
Layup		W/D_C70.55 x 25		
Vertical Acceleration	g	0.671		
Distance FWD of AP	m	10.449		
Pressure exerted by the cargo, WCDP	kN/m2	0.000		
Design Pressure	kN/m2	14.000	*7.000*	
Height above Base	m	5.100		

XPly

Ply Description	Actual Stress N/mm2	Allowable Stress N/mm2	Ultimate Stress N/mm2	Stress Fraction	C < > T
E-BX 600	*-21.594*	-34.116	*-103.381*	*0.209*	
E-BX 600	*-21.447*	-34.116	*-103.381*	*0.207*	
E-BX 600	*-21.301*	-34.116	*-103.381*	*0.206*	
E-BX 600	*-21.155*	-34.116	*-103.381*	*0.205*	
E-BX 600	*-21.009*	-34.116	*-103.381*	*0.203*	
E-BX 810	*2.563*	23.664	*71.709*	*0.036*	
E-LT 625	*8.340*	155.725	*471.895*	*0.018*	

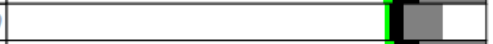
Ply Description	Actual Stress N/mm2	Allowable Stress N/mm2	Ultimate Stress N/mm2	Stress Fraction	C < > T
E-BX 810	*2.750*	23.664	*71.709*	*0.038*	
Airex C70.75	*0.018*	0.528	*1.600*	*0.011*	
EQX 820	*17.569*	41.941	*127.094*	*0.138*	
E-BX 810	*7.403*	23.664	*71.709*	*0.103*	
EQX 820	*18.085*	41.941	*127.094*	*0.142*	

7.9 WEATHER DECK

7.9.1 Fr. 10_Inner_Deck_Plate

Property	Units	Entered	Derived	Required
Base Width of Stiffener	mm	150.000		
Inner Skin Thickness	mm	1.650		
Outer Skin Thickness	mm	1.816		
Weight of inner skin	g/m2	2245.000		2151.106
Weight of outer skin	g/m2	2450.000		2151.106
Direct Core Shear Stress	N/mm2	0.125		0.450
Bending Moment	Nm	-3.979		
Poisson's Ratio		0.000		
Deflection	mm	2.294		8.400
Wrinkling Stress for inner skin	N/mm2	9.021		47.784
Wrinkling Stress for outer skin	N/mm2	6.212		51.202
X-ply rule compliance		PASS		
Thickness	mm	28.466		
Curvature	mm	0.000		
Panel Breadth	mm	840.000		
Panel Length	mm	1544.000		
Panel Aspect Ratio		1.838		
Stiffener Spacing	mm	990.000		
Neutral Axis	mm	12.377		
Stiffness	N cm4/mm2	8693.111		
Test At	mm	0.000		
Layup		W/D_C70.55 x 25		
Vertical Acceleration	g	0.640		
Distance FWD of AP	m	9.752		
Pressure exerted by the cargo, WCDP	kN/m2	0.000		
Design Pressure	kN/m2	8.406	*8.406*	
Height above Base	m	0.479		

XPly

Ply Description	Actual Stress N/mm2	Allowable Stress N/mm2	Ultimate Stress N/mm2	Stress Fraction	C < > T
E-BX 810	*-5.899*	-23.664	*-71.709*	*0.082*	
E-LT 625	*-17.742*	-155.725	*-471.895*	*0.038*	
E-BX 810	*-5.514*	-23.664	*-71.709*	*0.077*	
Airex C70.75	*-0.053*	-0.363	*-1.100*	*0.048*	
Airex C70.75	*0.024*	0.528	*1.600*	*0.015*	
EQX 820	*9.862*	41.941	*127.094*	*0.078*	
E-BX 810	*4.315*	23.664	*71.709*	*0.060*	
EQX 820	*10.929*	41.941	*127.094*	*0.086*	

7.9.2 Fr. 10_Deck Plate

Property	Units	Entered	Derived	Required
Base Width of Stiffener	mm	150.000		
Inner Skin Thickness	mm	1.650		
Outer Skin Thickness	mm	1.816		
Weight of inner skin	g/m2	2245.000		2151.106
Weight of outer skin	g/m2	2450.000		2388.779
Direct Core Shear Stress	N/mm2	0.347		0.450
Bending Moment	Nm	-11.071		
Poisson's Ratio		0.000		
Deflection	mm	6.578		8.400
Wrinkling Stress for inner skin	N/mm2	25.099		43.440
Wrinkling Stress for outer skin	N/mm2	17.283		46.547
X-ply rule compliance		PASS		
Thickness	mm	28.466		
Curvature	mm	0.000		
Panel Breadth	mm	840.000		
Panel Length	mm	2787.000		
Panel Aspect Ratio		3.318		
Stiffener Spacing	mm	990.000		
Neutral Axis	mm	12.377		
Stiffness	N cm4/mm2	8693.111		
Test At	mm	0.000		
Layup		W/D_C70.55 x 25		
Vertical Acceleration	g	0.640		
Distance FWD of AP	m	9.752		
Pressure exerted by the cargo, WCDP	t/m2	1.500		
Design Pressure	t/m2	2.250	*2.250*	
Height above Base	m	2.794		

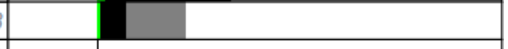
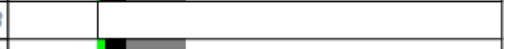
XPly

Ply Description	Actual Stress N/mm2	Allowable Stress N/mm2	Ultimate Stress N/mm2	Stress Fraction	C < > T
E-BX 810	*-16.413*	-21.513	*-71.709*	*0.229*	
E-LT 625	*-49.360*	-141.569	*-471.895*	*0.105*	
E-BX 810	*-15.341*	-21.513	*-71.709*	*0.214*	
Airex C70.75	*-0.147*	-0.330	*-1.100*	*0.134*	
Airex C70.75	*0.067*	0.480	*1.600*	*0.042*	
EQX 820	*27.439*	38.128	*127.094*	*0.216*	
E-BX 810	*12.006*	21.513	*71.709*	*0.167*	
EQX 820	*30.406*	38.128	*127.094*	*0.239*	

7.9.3 Fr.10_Upper DK_ Transverse

Property	Units	Entered	Derived	Required
Shear Stress	N/mm2	10.048		25.740
Deflection	mm	1.119		5.000
Web Thickness	mm	3.000		2.857
Effective Span	m	1.250		
Stiffener Spacing	mm	689.000		
Width of Attached Plate	mm	307.469		
Bending Moment	Nm	-1255.990		
Profile		Top Hat_100 x 100		
X-ply rule compliance		PASS		
Neutral Axis	mm	38.208		
Stiffness	N cm4/mm2	5479654.849		
Test At	mm	0.000		
Layup		BHD_C70.55 x 20		
Vertical Acceleration	g	0.671		
Distance FWD of AP	m	10.449		
Pressure exerted by the cargo, WCDP	kN/m2	0.000		
Design Pressure	kN/m2	14.000	*7.000*	
Height above Base	m	5.100		

XPly

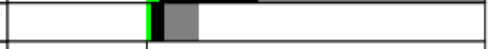
Ply Description	Actual Stress N/mm2	Allowable Stress N/mm2	Ultimate Stress N/mm2	Stress Fraction	C < > T
E-BX 600	*-22.471*	-34.116	*-103.381*	*0.217*	
E-BX 600	*-22.320*	-34.116	*-103.381*	*0.216*	
E-BX 600	*-22.168*	-34.116	*-103.381*	*0.214*	
E-BX 600	*-22.017*	-34.116	*-103.381*	*0.213*	
E-BX 600	*-21.866*	-34.116	*-103.381*	*0.212*	
E-BX 996	*2.546*	23.664	*71.709*	*0.036*	
E-LT 625	*8.499*	155.725	*471.895*	*0.018*	
E-BX 600	*3.892*	34.116	*103.381*	*0.038*	
Airex C70.55	*0.013*	0.330	*1.000*	*0.013*	
E-BX 600	*9.085*	34.116	*103.381*	*0.088*	
E-LT 625	*21.014*	155.725	*471.895*	*0.045*	
E-BX 996	*6.840*	23.664	*71.709*	*0.095*	

7.9.4 Fr. 10_Pri.Stf

Property	Units	Entered	Derived	Required
Shear Stress	N/mm2	10.756		25.740
Deflection	mm	1.870		8.000
Web Thickness	mm	4.200		3.849
Effective Span	m	2.000		
Stiffener Spacing	mm	968.000		
Width of Attached Plate	mm	471.085		
Bending Moment	Nm	-4517.333		
Profile		Top Hat_150 x150		
X-ply rule compliance		PASS		
Neutral Axis	mm	76.080		
Stiffness	N cm4/mm2	30202701.952		
Test At	mm	0.000		
Layup		W/D_C70.55 x 25		
Vertical Acceleration	g	0.640		
Distance FWD of AP	m	9.752		
Pressure exerted by the cargo, WCDP	kN/m2	0.000		
Design Pressure	kN/m2	14.000	*7.000*	
Height above Base	m	2.768		

XPly

Ply Description	Actual Stress N/mm2	Allowable Stress N/mm2	Ultimate Stress N/mm2	Stress Fraction	C < > T
E-BX 600	*-17.929*	-34.116	*-103.381*	*0.173*	
E-BX 600	*-17.830*	-34.116	*-103.381*	*0.172*	
EUD600	*-29.631*	-63.657	*-192.900*	*0.154*	
E-BX 600	*-17.633*	-34.116	*-103.381*	*0.171*	

Ply Description	Actual Stress N/mm2	Allowable Stress N/mm2	Ultimate Stress N/mm2	Stress Fraction	C < > T
EUD600	-29.301	-63.657	-192.900	0.152	
E-BX 600	-17.436	-34.116	-103.381	0.169	
EUD600	-28.971	-63.657	-192.900	0.150	
E-BX 600	-17.238	-34.116	-103.381	0.167	
EUD600	-28.641	-63.657	-192.900	0.148	
E-BX 600	-17.041	-34.116	-103.381	0.165	
E-BX 600	-16.942	-34.116	-103.381	0.164	
E-BX 810	5.704	23.664	71.709	0.080	
E-LT 625	18.045	155.725	471.895	0.038	
E-BX 810	5.830	23.664	71.709	0.081	
Airex C70.75	0.037	0.528	1.600	0.023	
EQX 820	21.426	41.941	127.094	0.169	
E-BX 810	8.970	23.664	71.709	0.125	
EQX 820	21.775	41.941	127.094	0.171	

7.9.5 Fr.10_Upper DK_ Logitidinals

Property	Units	Entered	Derived	Required
Shear Stress	N/mm2	13.491		25.740
Deflection	mm	4.912		11.600
Web Thickness	mm	4.880		4.544
Effective Span	m	2.900		
Stiffener Spacing	mm	1200.000		
Width of Attached Plate	mm	648.306		
Bending Moment	Nm	-11774.000		
Profile		Top Hat_100 x 185		
X-ply rule compliance		PASS		
Neutral Axis	mm	91.166		
Stiffness	N cm4/mm2	62989870.131		
Test At	mm	0.000		
Layup		W/D_C70.55 x 25		
Vertical Acceleration	g	0.671		
Distance FWD of AP	m	10.449		
Pressure exerted by the cargo, WCDP	kN/m2	0.000		
Design Pressure	kN/m2	14.000	*7.000*	
Height above Base	m	5.100		

XPly

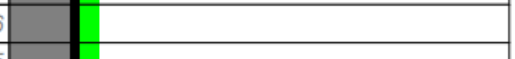
Ply Description	Actual Stress N/mm2	Allowable Stress N/mm2	Ultimate Stress N/mm2	Stress Fraction	C < > T
EUD600	-45.136	-63.657	-192.900	0.234	
E-BX 600	-26.887	-34.116	-103.381	0.260	
E-BX 600	-26.762	-34.116	-103.381	0.259	
EUD600	-44.511	-63.657	-192.900	0.231	
E-BX 600	-26.513	-34.116	-103.381	0.256	
EUD600	-44.095	-63.657	-192.900	0.229	
E-BX 600	-26.264	-34.116	-103.381	0.254	
EUD600	-43.680	-63.657	-192.900	0.226	
E-BX 600	-26.016	-34.116	-103.381	0.252	
EUD600	-43.264	-63.657	-192.900	0.224	
E-BX 600	-25.767	-34.116	-103.381	0.249	
EUD600	-42.848	-63.657	-192.900	0.222	
E-BX 600	-25.518	-34.116	-103.381	0.247	
EUD600	-42.433	-63.657	-192.900	0.220	
E-BX 600	-25.269	-34.116	-103.381	0.244	
E-BX 810	9.388	23.664	71.709	0.131	

Ply Description	Actual Stress N/mm2	Allowable Stress N/mm2	Ultimate Stress N/mm2	Stress Fraction	C < > T
E-LT 625	*29.607*	155.725	*471.895*	*0.063*	
E-BX 810	*9.545*	23.664	*71.709*	*0.133*	
Airex C70.75	*0.060*	0.528	*1.600*	*0.038*	
EQX 820	*32.217*	41.941	*127.094*	*0.253*	
E-BX 810	*13.469*	23.664	*71.709*	*0.188*	
EQX 820	*32.652*	41.941	*127.094*	*0.257*	

7.9.6 Fr.10_Upper DK_ Transverse

Property	Units	Entered	Derived	Required
Shear Stress	N/mm2	10.048		25.740
Deflection	mm	1.082		5.000
Web Thickness	mm	3.000		2.857
Effective Span	m	1.250		
Stiffener Spacing	mm	689.000		
Width of Attached Plate	mm	307.469		
Bending Moment	Nm	-1255.990		
Profile		Top Hat_100 x 100		
X-ply rule compliance		PASS		
Neutral Axis	mm	42.902		
Stiffness	N cm4/mm2	5665907.005		
Test At	mm	0.000		
Layup		W/D_C70.55 x 25		
Vertical Acceleration	g	0.671		
Distance FWD of AP	m	10.449		
Pressure exerted by the cargo, WCDP	kN/m2	0.000		
Design Pressure	kN/m2	14.000	*7.000*	
Height above Base	m	5.100		

XPly

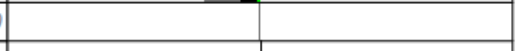
Ply Description	Actual Stress N/mm2	Allowable Stress N/mm2	Ultimate Stress N/mm2	Stress Fraction	C < > T
E-BX 600	*-21.594*	-34.116	*-103.381*	*0.209*	
E-BX 600	*-21.447*	-34.116	*-103.381*	*0.207*	
E-BX 600	*-21.301*	-34.116	*-103.381*	*0.206*	
E-BX 600	*-21.155*	-34.116	*-103.381*	*0.205*	
E-BX 600	*-21.009*	-34.116	*-103.381*	*0.203*	
E-BX 810	*2.563*	23.664	*71.709*	*0.036*	
E-LT 625	*8.340*	155.725	*471.895*	*0.018*	
E-BX 810	*2.750*	23.664	*71.709*	*0.038*	
Airex C70.75	*0.018*	0.528	*1.600*	*0.011*	
EQX 820	*17.569*	41.941	*127.094*	*0.138*	
E-BX 810	*7.403*	23.664	*71.709*	*0.103*	
EQX 820	*18.085*	41.941	*127.094*	*0.142*	

7.10 DOUBLE BOTTOM

7.10.1 Fr. 10_Inner_Deck_Plate

Property	Units	Entered	Derived	Required
Base Width of Stiffener	mm	150.000		
Inner Skin Thickness	mm	2.170		
Outer Skin Thickness	mm	2.170		
Weight of inner skin	g/m2	2221.000		2104.882
Weight of outer skin	g/m2	2221.000		2104.882
Direct Core Shear Stress	N/mm2	0.151		0.315
Bending Moment	Nm	-3.979		
Poisson's Ratio		0.000		
Deflection	mm	3.225		8.400
Wrinkling Stress for inner skin	N/mm2	8.354		39.347
Wrinkling Stress for outer skin	N/mm2	6.331		39.347
X-ply rule compliance		PASS		
Thickness	mm	24.340		
Curvature	mm	0.000		
Panel Breadth	mm	840.000		
Panel Length	mm	1544.000		
Panel Aspect Ratio		1.838		
Stiffener Spacing	mm	990.000		
Neutral Axis	mm	12.187		
Stiffness	N cm4/mm2	7207.593		
Test At	mm	0.000		
Layup		BHD_C70.55 x 20		
Vertical Acceleration	g	0.640		
Distance FWD of AP	m	9.752		
Pressure exerted by the cargo, WCDP	kN/m2	0.000		
Design Pressure	kN/m2	8.406	*8.406*	
Height above Base	m	0.479		

XPly

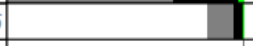
Ply Description	Actual Stress N/mm2	Allowable Stress N/mm2	Ultimate Stress N/mm2	Stress Fraction	C < > T
E-BX 996	*-5.375*	-23.664	*-71.709*	*0.075*	
E-LT 625	*-15.478*	-155.725	*-471.895*	*0.033*	
E-BX 600	*-6.427*	-34.116	*-103.381*	*0.062*	
Airex C70.55	*-0.030*	-0.248	*-0.750*	*0.040*	
Airex C70.55	*0.019*	0.330	*1.000*	*0.019*	
E-BX 600	*6.447*	34.116	*103.381*	*0.062*	
E-LT 625	*15.524*	155.725	*471.895*	*0.033*	
E-BX 996	*5.389*	23.664	*71.709*	*0.075*	

7.11 SUPER STRUCTURE

7.11.1 Fr.10_Side_Plate

Property	Units	Entered	Derived	Required
Distance FWD of AP	m	9.752		
Location		Side		
Is location on 1st Tier?		1		
Design Pressure	kN/m2	7.660	*7.660*	
Base Width of Stiffener	mm	100.000		
Inner Skin Thickness	mm	2.180		
Outer Skin Thickness	mm	2.338		
Weight of inner skin	g/m2	2221.000		2104.882
Weight of outer skin	g/m2	2195.000		2092.642
Direct Core Shear Stress	N/mm2	0.108		0.315
Bending Moment	Nm	-2.749		
Poisson's Ratio		0.000		
Deflection	mm	2.162		17.360
Wrinkling Stress for inner skin	N/mm2	5.698		35.747
Wrinkling Stress for outer skin	N/mm2	3.561		38.535
X-ply rule compliance		PASS		
Thickness	mm	24.518		
Curvature	mm	0.000		
Panel Breadth	mm	868.000		
Panel Length	mm	980.000		
Panel Aspect Ratio		1.129		
Stiffener Spacing	mm	968.000		
Neutral Axis	mm	10.896		
Stiffness	N cm4/mm2	8418.595		
Test At	mm	0.000		
Layup		SS/S_C70.55 x 20		

XPly

Ply Description	Actual Stress N/mm2	Allowable Stress N/mm2	Ultimate Stress N/mm2	Stress Fraction	C < > T
E-BX 600	*-4.892*	-31.014	*-103.381*	*0.047*	
E-LT 625	*-10.640*	-141.569	*-471.895*	*0.023*	
E-BX 996	*-3.244*	-21.513	*-71.709*	*0.045*	
Airex C70.55	*-0.021*	-0.225	*-0.750*	*0.027*	
Airex C70.55	*0.010*	0.300	*1.000*	*0.010*	
E-LT 625	*7.498*	141.569	*471.895*	*0.016*	
EQX 820	*6.296*	38.128	*127.094*	*0.050*	
E-BX 600	*3.806*	31.014	*103.381*	*0.037*	
CSM 150	*2.473*	27.300	*91.000*	*0.027*	

7.11.2 Fr.10_Side_Pri.Stf

Property	Units	Entered	Derived	Required
Shear Stress	N/mm2	6.179		25.740
Deflection	mm	2.372		13.333
Web Thickness	mm	3.000		2.857
Effective Span	m	2.000		
Stiffener Spacing	mm	968.000		
Width of Attached Plate	mm	471.085		
Bending Moment	Nm	-1235.810		
Profile		Top Hat_100 x 100		
X-ply rule compliance		PASS		
Neutral Axis	mm	29.148		
Stiffness	N cm4/mm2	6513829.099		
Test At	mm	0.000		
Layup		SS/S_C70.55 x 20		
Distance FWD of AP	m	0.000		
Location		Side		
Is location on 1st Tier?		1		
Design Pressure	kN/m2	3.830	*3.830*	

XPly

Ply Description	Actual Stress N/mm2	Allowable Stress N/mm2	Ultimate Stress N/mm2	Stress Fraction	C < > T
E-BX 600	-20.527	-34.116	-103.381	0.199	
E-BX 600	-20.402	-34.116	-103.381	0.197	
E-BX 600	-20.277	-34.116	-103.381	0.196	
E-BX 600	-20.152	-34.116	-103.381	0.195	
E-BX 600	-20.027	-34.116	-103.381	0.194	
E-BX 600	0.966	34.116	103.381	0.009	
E-LT 625	2.483	155.725	471.895	0.005	
E-BX 996	0.889	23.664	71.709	0.012	
Airex C70.55	0.005	0.330	1.000	0.005	
E-LT 625	12.728	155.725	471.895	0.027	
EQX 820	10.038	41.941	127.094	0.079	
E-BX 600	5.895	34.116	103.381	0.057	
CSM 150	3.804	30.030	91.000	0.042	

8 Machinery

Machinery according to MCA Workboat Code 2

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