



4

BARCOL HARDNESS TEST REPORT

Test Standard:

ASTM D 2583: 1995 Standard Test Method for Indentation Hardness
 of Rigid Plastics by Means of a Barcol Impressor

Sample Information:

SISTERSHIP No 2

Client Name:	Fiber Glass International
Mailing Address:	P.O. Box 26
Mailing Address:	Richlands
Mailing Address:	Qld 4077
Attn:	Not relevant
Phone:	07 32713944
Fax:	07 32713603
STS Job Number:	STS-05-190-H
Client Job Id:	Hull No. P-301 8m Test Panel
Sample Description:	Laminate Test Panel
Specimen Orientation:	Mold Side Tested
Specimen Conditioning:	23°C, 50% RH Constant for 24 Hours
Number of Readings:	33
Test Date:	19/10/2005
Testing Technician:	W.Crowell

Test Equipment Details:

Impressor Model:	Barber-Colman GYZJ 934
Serial Number:	11069.3
Calibration Date:	8/06/2005
Location:	P9 108 Test Laboratory, Fibre Composites Research Centre, USQ

Specimen Results:

Barcol Hardness	
Average:	40
Standard Deviation:	2.9

Checked By: _____

Authorised Signature: _____

Date: 4/11/2005

TENSILE TESTING REPORT

ISO 527-4/2/2: 1993 Plastics – Determination of Tensile Properties

Test Date:
20/10/2005

Test Method:
FCDD Laminate Tensile Test - Dual Ext - Normal Tension
(ISO 527).msm

Operator:
Not relevant

Sample Information:

(A) Client Name:	Fiber Glass International
(B) Mailing Address:	P.O. Box 26
(C) Mailing Address:	Richlands
(D) Mailing Address:	Qld 4077
(E) Attn:	Not relevant
(F) Phone:	07 32713944
(G) Fax:	07 32713603
(H) Client Job ID:	Hull No. P-301 8m Test Panel
(I) STS Job Number:	STS-05-190-T
(J) Specimen Orientation:	0 Degrees
(K) Sample Description:	Test Panel for Vessel
(L) Layup Sequence:	Details Not Supplied by Client
(M) Principle Dimensions:	600mm x 600mm
(N) Method of Manufacture:	Details Not Supplied by Client
(O) Laminate Cure Schedule:	Details Not Supplied by Client
(P) Test Room Conditions:	22°C, 50% RH
(Q) Conditioning Temp. & RH:	23°C, 50% RH Constant for 24 Hours
(R) Clamping Pressure (MPa):	7
(S) Testing Speed (mm/min):	2.0
(T) Specimen Prep. Method:	Specimens cut by diamond coated cutting wheel, edges sanded smooth & defect free.

Test Equipment Details:

Test Machine:	MTS 810 Material Test System
Location:	Z104 Test Laboratory, Faculty of Engineering and Surveying, USQ
Accuracy Grading:	Grade A
Machine Calibration Date:	10/02/2005
Expiration Date:	10/02/2006
Strain Measurement Device:	MTS Extensometer Model No. 632.85F-14
Extensometer Calibration Date:	01/09/2005
Load Cell Calibration Date:	10/02/2005
Expiration Date:	10/02/2006

Specimen Results:

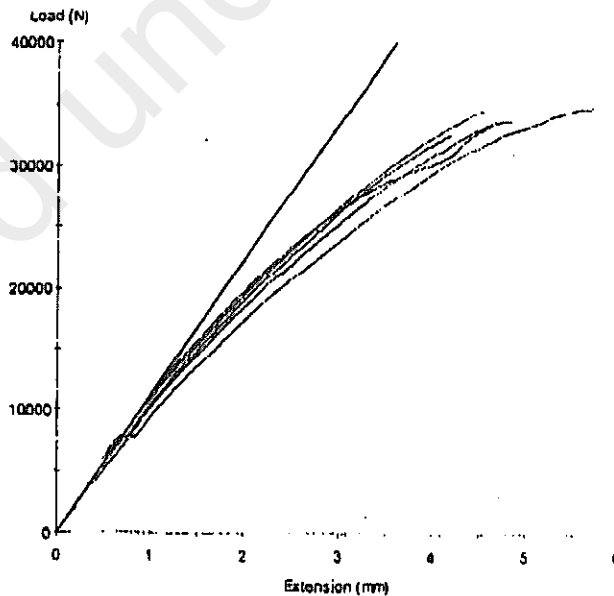
Specimen #	Thickness 1 mm	Thickness 2 mm	Thickness 3 mm	Width 1 mm	Width 2 mm	Width 3 mm	Avg Thick mm	Avg Width mm	Area mm ²
1	8.82	8.85	9.28	25.10	25.04	25.09	8.98	25.08	225.27
2	8.90	8.77	9.01	25.18	25.13	25.16	8.89	25.16	223.73
3	8.84	8.97	9.30	25.07	25.04	25.06	9.04	25.06	226.43
4	8.83	9.18	9.49	25.08	25.09	25.10	9.17	25.09	229.99
5	8.57	8.92	9.39	25.04	25.05	25.06	8.96	25.05	224.45
Avg	8.79	8.94	9.29	25.09	25.07	25.09	9.01	25.09	225.97
Stdev	0.13	0.15	0.18	0.05	0.04	0.04	0.10	0.04	2.46

Specimen Results:

Specimen #	Peak Load N	Peak Stress MPa	Modulus of Elasticity MPa						
1	33681	149.51	12081						
2	34584	154.58	11853						
3	32643	144.17	11733						
4	33617	146.17	12075						
5	34864	155.33	12131						
Avg	33878	149.95	11975						
Stdev	881	4.96	172						

Specimen Comments:

Specimen #	Failure Status
1	Acceptable
2	Acceptable
3	Acceptable
4	Acceptable
5	Acceptable



Load vs Extension Plot

Checked By: _____

Authorised Signature: _____

Date: 4/11/2005

FLEXURE TESTING REPORT

ISO 14125:1998(E)/Method A/Class II

Fibre-Reinforced Plastic Composites - Determination of Flexural Properties

Test Date:
1/11/2005

Test Method:
STS - Laminate Flexure (ISO 14125).msm

Operator:
Not relevant

Sample Information:

(A) Client Name:	Fiber Glass International
(B) Mailing Address:	P.O. Box 26
(C) Mailing Address:	Richlands
(D) Mailing Address:	Qld 4077
(E) Attn:	Not relevant
(F) Phone:	07 32713944
(G) Fax:	07 32713603
(H) Client Job ID:	Hull No. P-301 8m Test Panel
(I) STS Job Number:	STS-05-190-F
(J) Layup Sequence:	Details Not Supplied by Client
(K) Test Orientation:	0 Degrees
(L) Sample Description:	Test Panel For Vessel
(M) Laminate Cure Schedule:	Details Not Supplied by Client
(N) Conditioning Temp. & Humidity:	23°C, 50% RH Constant for 48 Hours
(O) Test Room Conditions:	20°C, 39% RH
(P) Nominal Specimen Dimensions (mm):	200 x 15
(Q) Nominal Span (mm):	143
(R) Test Speed (mm/min):	4.0
(S) Surface in Compression:	Mould Side
(T) Cushion Material:	Not Used
(U) Specimen Preparation Method:	Specimens cut by diamond coated cutting wheel, edges sanded smooth & defect free.
(V) Equations Used:	ISO 14125: 1998(E) Clause 10.1

Test Equipment Details:

Test Machine:	MTS Alliance RT/10
Location:	P9 110 Test Laboratory, Fibre Composites Research Centre, USQ
Accuracy Grading:	Grade A
Machine Calibration Date:	31/05/2005
Expiration Date:	31/05/2006
Strain Measurement Device:	Axial Displacement of Crosshead
Strain Calibration Date:	31/05/2005
Expiration Date:	31/05/2006
Load Cell Calibration Date:	31/05/2005
Expiration Date:	31/05/2006

Specimen Results:

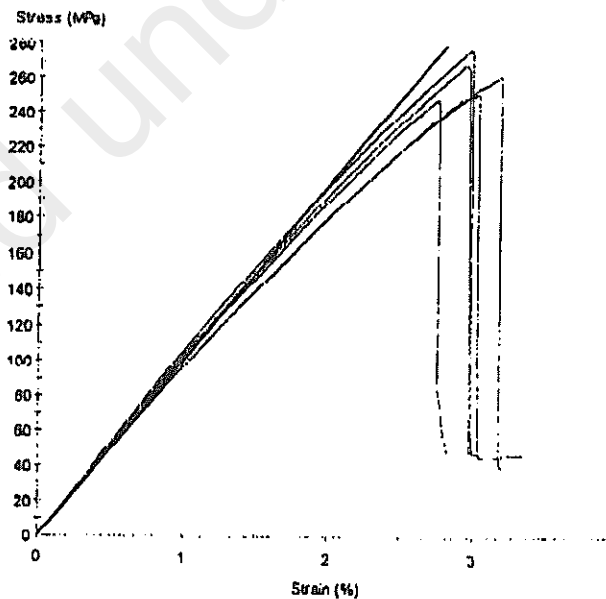
Specimen #	Thickness 1 mm	Thickness 2 mm	Thickness 3 mm	Width 1 mm	Width 2 mm	Width 3 mm	Average Width mm	Average Thickness mm	Peak Load N
1	9.07	9.03	9.16	14.95	14.95	14.96	14.95	9.09	1543
2	9.15	9.29	9.33	15.09	15.10	15.15	15.11	9.26	1522
3	8.53	8.70	8.83	14.97	14.95	14.99	14.97	8.69	1460
4	8.30	8.47	8.65	14.94	14.90	14.95	14.93	8.47	1245
5	9.18	9.33	9.34	15.08	15.03	15.01	15.04	9.28	1580
Mean	8.85	8.96	9.06	15.01	14.99	15.01	15.00	8.96	1470
Std Dev	0.40	0.37	0.31	0.07	0.08	0.08	0.07	0.36	133

Specimen Results:

Specimen #	Peak Flexural Stress MPa	Deflection at Peak mm	Strain at Peak %	Flexural Modulus MPa					
1	268.12	11.03	2.94	10549					
2	252.04	11.13	3.02	9931					
3	277.26	11.67	2.97	10781					
4	249.09	11.07	2.75	10495					
5	261.52	11.67	3.18	9958					
Mean	261.61	11.31	2.97	10343					
Std Dev	11.57	0.33	0.15	379					

Specimen Comments:

Specimen #	Failure Mode
1	Tensile Fracture at Outermost Layer
2	Tensile Fracture at Outermost Layer
3	Tensile Fracture at Outermost Layer
4	Tensile Fracture at Outermost Layer
5	Tensile Fracture at Outermost Layer



Stress vs Strain Plot

Checked By: _____

Authorized Signature: _____

Date: 4/11/2005

ANNEXURE B

DAILY RECORD OF LAMINATING OF E.R.P. SHIPS (GELCOAT)

Ship: B.M. SPORTS FISHER Date: 13-6-06

Hull No: D-314

Builder: KEVLA CAT

Owner: Not relevant

Resin Type and Batch No: KW 605028

AQU PER GEL

WHITE S

Trade Name and Supplier: FGI

Botany NSW 2019

Reinforcement Type and Batch No:

Trade Name and Supplier:

Catalyst Type and Batch No: NR60508 Mckp NR Other

Trade Name and Supplier: FGI

Brookvale NSW 2100

Area of Laminate Being Applied:

Basic Hull Keel Chine Sheer

Start 8:00 am Temperature 17

Humidity 70%

Finish 9:00 am Temperature 17

Humidity 70%

Start	Temperature	Humidity ...
Finish	Temperature	Humidity ...
Start	Temperature	Humidity ...
Finish	Temperature	Humidity ...
Start	Temperature	Humidity ...
Finish	Temperature	Humidity ...

Total Lamination Time 1hr

Total Reinforcement Used: C/R ... CSM ... W/R ... Other ...

40kg Gelcoat

Total Resin Used: Polyester Iso ... Ortho ... Vinylester ... Epoxy

Percentage Catalyst: 1.25%

Resin/Fibre Ratio:

Weight of Reinforcement Per Metre² at the end of Each Day:

APPLICATION GUN HAND

Average Gel time: 40 min

Time from Gel Coat application to Hull Removal from Mould:

I hereby certify that I sincerely believe that the information provided above is a correct record.

Signature

Company Position: Gun Operator

Date: 13-6-06

ANNEXURE B

DAILY RECORD OF LAMINATING OF F.R.P. SHIPS

Ship: 8M SPORTS FISHER Date: 14-6-06

Hull No: D-314

Builder: KEVLACAT

Owner: Not relevant

Resin Type and Batch No: NV604 8335

DERAKANE

Trade Name and Supplier: Nuplex Resins

Batany NSW 2019

Reinforcement Type and Batch No: Continuous Rovings

359A

Trade Name and Supplier: Owens Corning

Catalyst Type and Batch No: NR60505 Melp NR Other

Trade Name and Supplier: FG1

Brookvale NSW 2100

Area of Laminate Being Applied:

Basic Hull Keel Chine Sheer

Start	<u>7.00 am</u>	Temperature	<u>15</u>	Humidity	<u>68%</u>
Finish	<u>3.00 pm</u>	Temperature	<u>22</u>	Humidity	<u>70%</u>

Start	Temperature	Humidity ...
Finish	Temperature	Humidity ...
Start	Temperature	Humidity ...
Finish	Temperature	Humidity ...
Start	Temperature	Humidity ...
Finish	Temperature	Humidity ...

Total Lamination Time 5 hrs

Total Reinforcement Used: C/R CSM ... W/R ... Other ...

37 Kg

Total Resin Used: Polyester Iso ... Ortho ... Vinylester Epoxy

75 Kg

Percentage Catalyst: 1%

Resin/Fibre Ratio: 2 to 1

Weight of Reinforcement Per Metre² at the end of Each Day:

APPLICATION GUN HAND

Average Gel time: 30 min

Time from Gel Coat application to Hull Removal from Mould:

I hereby certify that I sincerely believe that the information provided above is a correct record.

Signature

Company Position: Gun Operator

Date: 14-6-06

Start	Temperature	Humidity ...
Finish	Temperature	Humidity ...
Start	Temperature	Humidity ...
Finish	Temperature	Humidity ...
Start	Temperature	Humidity ...
Finish	Temperature	Humidity ...

Total Lamination Time 10 hrs

Total Reinforcement Used: C/R CSM ... W/R ... Other ...

140 Kg.

Total Resin Used: Polyester Iso Ortho ... Vinylester ... Epoxy

280 Kg.

Percentage Catalyst: 1.25%

26Kg Keula

Resin/Fibre Ratio: 2 to 1

Weight of Reinforcement
Per Metre² at the end of
Each Day:

APPLICATION GUN HAND

Average Gel time: 35 min

Time from Gel Coat
application to Hull
Removal from Mould:

I hereby certify that I sincerely believe that the information provided above is a correct record.

Signature

Company Position: Gun Operator

Date: 15-6-06

ANNEXURE B

DAILY RECORD OF LAMINATING OF F.R.P. SHIPS

Ship: B.M. SPORTS FISHER Date: 16-6-06

Hull No: D-314

Builder: KEULACAT

Owner: Not relevant

Resin Type and Batch No: Polyplex R/W ISO WXF-45
WR605016

Trade Name and Supplier: Nudex Resins
Batany NSW 2019

Reinforcement Type and Batch No: Continuous Roving
359A

Trade Name and Supplier: Owens Corning

Catalyst Type and Batch No: NRobosox Mep NR Other

Trade Name and Supplier: FG1
Brookvale NSW 2100

Area of Laminate Being Applied:

Basic Hull Keel Chine Sheer

Start 6:00 am Temperature 12 Humidity 6.5%
Finish 1:00 pm Temperature 23 Humidity 78%

Start	Temperature	Humidity ...
Finish	Temperature	Humidity ...
Start	Temperature	Humidity ...
Finish	Temperature	Humidity ...
Start	Temperature	Humidity ...
Finish	Temperature	Humidity ...

Total Lamination Time 7 hrs

Total Reinforcement Used: C/R CSM ... W/R ... Other ...

Total Resin Used: Polyester Iso ... Ortho ... Vinylester ... Epoxy

Percentage Catalyst: 1.25%

Resin/Fibre Ratio: 2 to 1

Weight of Reinforcement Per Metre² at the end of Each Day:

APPLICATION GUN HAND

Average Gel time: 35 min

Time from Gel Coat application to Hull Removal from Mould:

I hereby certify that I sincerely believe that the information provided above is a correct record.

.....
Signature

Company Position: Gun Operator

Date: 16-6-06