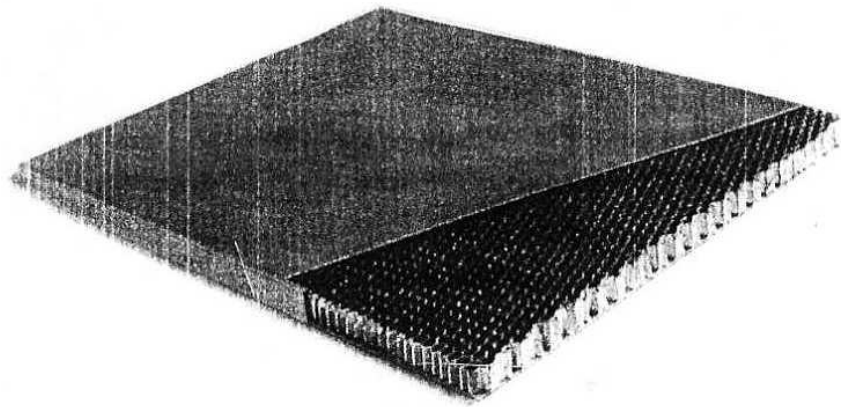


DATA SHEET

HONEYCOMB TOOLING PANELS

HCL-180



For use with low-temperature, composite tooling applications.

This fabricated tooling panel is built from fiberglass and epoxy skins with a perforated and corrosion-resistant aluminum core for up to a 180°F (82°C) working temperature. Contains two plies of 10-ounce fiberglass (.030 total thickness). Its surface is protected with high-quality peel ply for ready bonding and highly stable composite tooling.

Uses

Stretch Form Supports
Support Structures
Egg Crate Supports
Drill Fixtures
Check Gauges

Sizes

4' X 8' Standard
4' X 12' Standard
Other Sizes Available
Upon Request

Thickness

1/2", 3/4", 1", 1.5", 2"

Meets Boeing MMS 101 specifications.

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DATA SHEET

HONEYCOMB TOOLING PANELS

HCL-12 DOUBLE CORE

Double Core 180

Extra strength for laminated tooling applications.

An extra-strong tooling panel fabricated with four plies of 10-ounce fiberglass with two pieces of honeycomb sandwiching. In total, 12 plies are bonded together for high strength and dimensional stability. A fiberglass-and-epoxy skin and perforated, corrosion-resistant aluminum core provide 180 F (82 C) maximum working temperatures. Peel ply surface creates easy bonding.

Uses	Sizes	Thickness
Egg Crate Stiffening	4' X 8' Standard	1", 1.5", 2", 3", 4"
Support Structures	4' X 12' Standard	
Bonding Jigs	Other Sizes Available	
Drill Fixtures	Upon Request	
Check Gauges		

Meets Boeing MMS 101 specifications.

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DATA SHEET

HONEYCOMB TOOLING PANELS HCL-16

16 Ply Triple Core 180°

For use with heavy-duty and low-temperature applications.

Constructed much like our Double Core Panel and also designed for 180°F (82°C) maximum working temperatures, the Triple Core contains four 4-ply skins of 10-ounce 7500 fiberglass with two pieces of Honeycomb sandwiching. A total of 16 plies are pressed together for high peel strength. Peel ply surface for easy bonding.

Uses

Egg Crating Stiffeners
Support Structures
Bonding Jigs
Check Gauges
Drill Fixtures

Sizes

4' X 8' Standard
4' X 12' Standard
Other Sizes Available
Upon Request

Thickness

1", 1.5", 2", 3", 4"

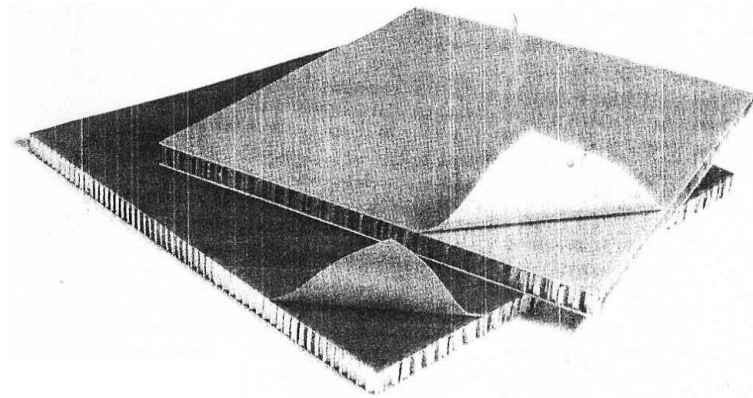
Meets Boeing MMS 101 Specifications

DATA SHEET

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HONEYCOMB TOOLING PANELS

HCI-350



For mid-temperature applications

Aluminum Honeycomb panel fabricated with fiberglass skins and high-temperature resins for working temperatures up to 350°F (176°C). A perforated corrosion resistant core and 2 plies of 10-ounce fiberglass cloth provide strength and stability. Bonded under pressure for high peel strength. Honeycomb panel post cured. Peel ply applied for good bonding surface. Staged post cured to 350°F (176°C).

Uses

Bonding Jigs
Stretch Form Supports
Autoclave Applications
Egg Crating

Sizes

4' X 8' Standard
4' X 12' Standard
Other Sizes Available
Upon Request

Thickness

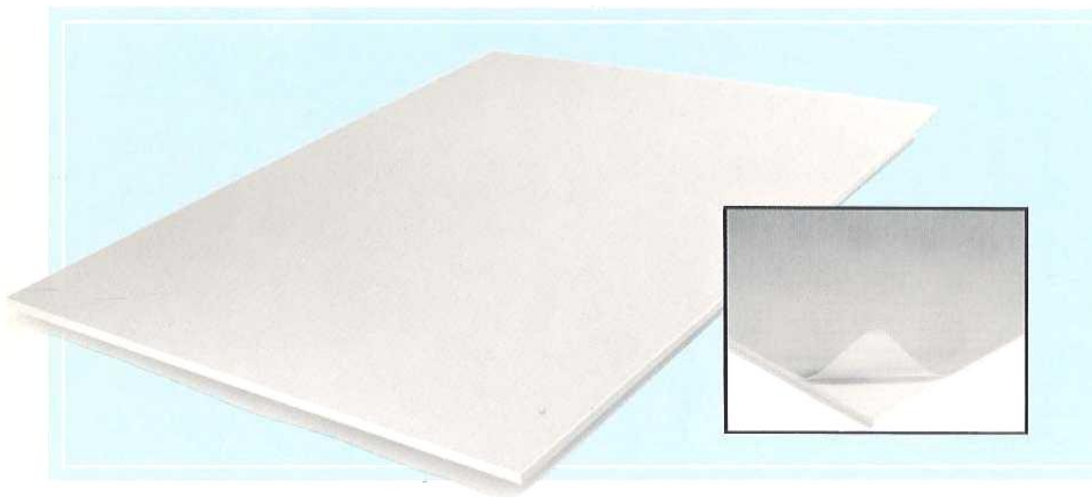
1/2", 3/4", 1", 1.5", 2"
3", and 4"

Meets Boeing MMS 101 Specifications

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DATA SHEET

LAMINATED TOOLING BOARD 350-MF



Laminated Tooling Board 350°

For mid-temperature reinforcing and construction of laminated tooling applications.

The Laminated Tooling Board and Plate consist of multiple layers of fiberglass mat with multiple layers of 1.5 oz mat cloth impregnated with epoxy resins that are pressed out with a 500 or 600-ton press.

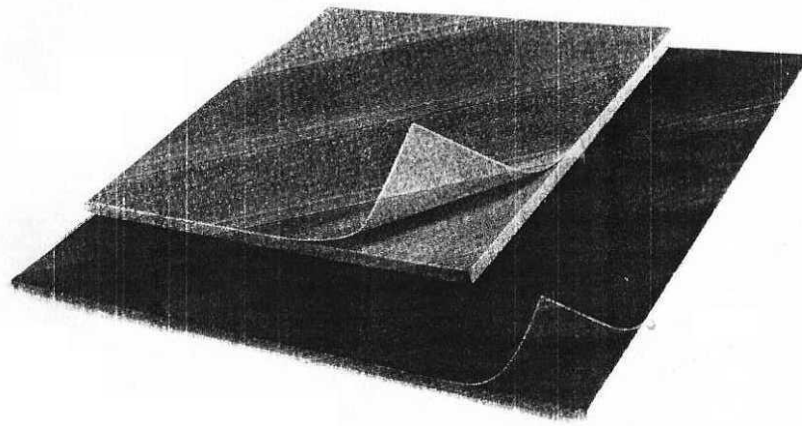
The working temperature of the 350-MF is 350° F (82° C).

Uses	Surface	Size	Thickness
Check Gauges	Peel Ply	4' X 8' Standard	1/8", 1/4", 3/8", 1/2"
Egg Crating		4' X 12' Standard	5/8", 3/4", 1"
Support Structures		Other Sizes Available	
Stiffening Ribs		Upon Request	
Drill Fixtures			

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DATA SHEET

HONEYCOMB TOOLING PANELS 180-MF



Laminated Tooling Board 180°

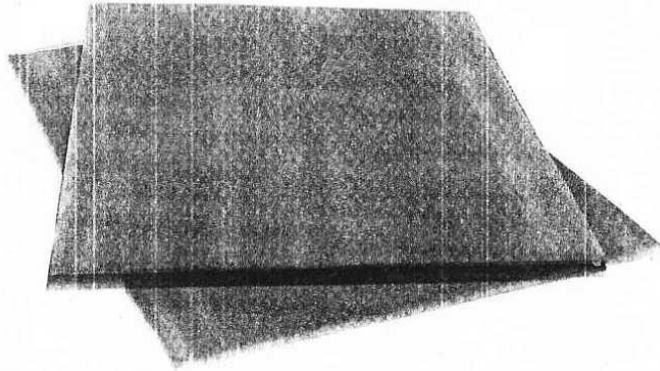
This panel is ideal for low-temperature reinforcing and construction of laminated - tooling applications. It is manufactured from 1.5-oz. fiberglass mat 10 oz. fiberglass cloth impregnated with epoxy resins that are pressed out with a 500 or 600-ton press. The working temperature of the 180-MF is 180° F (82° C).

Uses	Surface	Sizes	Thickness
Check Gauges Egg Crating Support Structures Stiffening Ribs Drill Fixtures	Peel Ply	4' X 8' Standard 4' X 12' Standard Other Sizes Available Upon Request	1/8", 1/4", 3/8", 1/2" 5/8", 3/4", 1"

DATA SHEET

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LAMINATED TOOLING BOARD FSF-350



High Temp Laminated Tooling Board

Ideal for mold work, all High Temp Flat Stock is laminated with high temperature resins up to 450°F. High Temp Flat Stock is constructed of 7500 style fiberglass and 1.5 oz. matting or 100% 7500 fiberglass.

A special peel-ply material is factory applied to the flat stock to provide protection during shipment and to aid in the bonding process. Peel-ply material must be removed prior to use.

USES

Support Structures
Egg Crating
Stiffening Ribs
Check Gauges
Drill Fixtures

SURFACE

Peel Ply

SIZES

4' X 8'
4' X 12'
Other Sizes
Available on
Request

THICKNESS

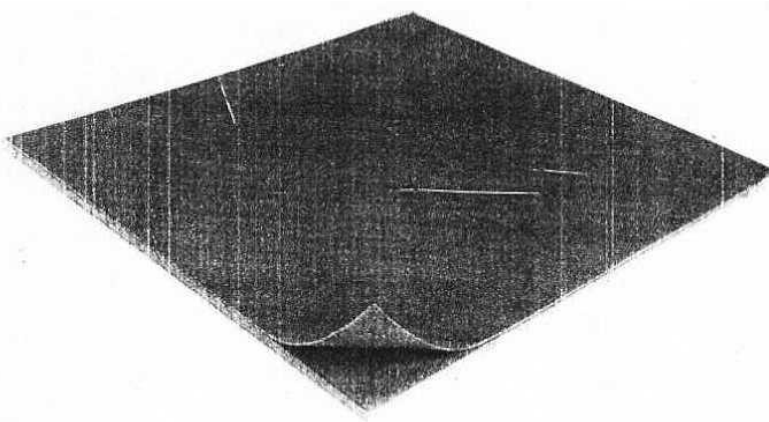
1/4", 3/8" 1/2"
Other Sizes Available
on Request

DATA SHEET

LAMINATED TOOLING BOARD

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180-P



Phenolic

The plastic phenolic is both rugged, dependable, and of the highest grade available in the industry.

Uses	Surface	Sizes	Thickness
Ribbing	Smooth or Sanded	4' X 10' Standard	1/4", 3/8", 1/2"

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DATA SHEET

POLYURETHANE FOAM 612-PF



Polyurethane foam is available in various densities from 4 to 40 lbs. Ford Motor Company and other automotive and aircraft companies for making patterns and models have approved the 20 lb. density. Dimensional stability is good. The 6 & 10 lb. densities are suitable for N.C. and tape proofing. Polyurethane foam produces patterns that are light and easier to mock-up. It's possible to use polyurethane foam to take duplicates from patterns without damaging the original. Popular densities, such as 2, 6, 10 & 20 lb. are stocked. All other densities can be special ordered.

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DATA SHEET

LIGHTWEIGHT FIBERGLASS TOOLING BOARD

200J was introduced for use as a lightweight set-up board on bench top assembly jigs. The product is composed of two fiberglass face sheets with a core of lightweight, medium density foam. REK-200J is produced in sheet form. One side is molded flat with a white surface and the backside is covered with protective peel ply. It is intended to replace aluminum jig plate in applications where reduced weight is feasible. Its lower cost and reduced weight offer major savings in both material and labor. Preliminary testing has shown REK-200J sheet stock to hold tapped threads; press-fit bushings, inserts, drilled pinholes and reamed pinholes.

200J is designed for:

Uses

Lightweight set-up
boards on
bench top
assembly jigs

Sizes

4' x 8' Standard
Other sizes
available upon
request

Thickness

1/4', 1/2', 3/4", 1'
Other sizes available
upon request

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DATA SHEET

HONEYCOMB GRAPHITE TOOLING BOARD 180°F & 425°F

Tooling panel fabricated from carbon graphite skins and corrosion-resistant aluminum core for high temperature applications. Skins are two plies of 10 oz. carbon fiber cloth .030 thickness.

APPLICATION

Reinforcing graphite tooling with high dimensional stability.
425° F working temperature.
Staged post cured to 425°F.

Uses

Autoclave uses up to 425°F
Stretch forms
Egg crating stiffeners
Bonding fixtures

Sizes

4' X 8' Standard
4' X 12' Standard

Thickness

1/2", 1", 1.5", 2"

Meets Boeing MMS 101 specifications.

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DATA SHEET

GRAPHITE TOOLING PANEL 180°F & 425°F

Laminated tooling panel consisting of multiple layers of 10-oz. graphite cloth impregnated with epoxy resins and pressed with 600-ton press.

APPLICATION

Reinforcing high temperature tooling panel for high performance uses in autoclave conditions. Working temperatures to 425°F. Staged post cured to 425°F.

Uses

High temp. oven tools
Stiffening ribs
Graphite parts
Reinforcement for
graphite tooling
Egg craft stiffeners

Surface

Peel-ply

Sizes

4' X 8' Standard
4' X 12' Standard

Thickness

1/8", 1/4", 3/8"
1/2", 5/8", 3/4"
1"

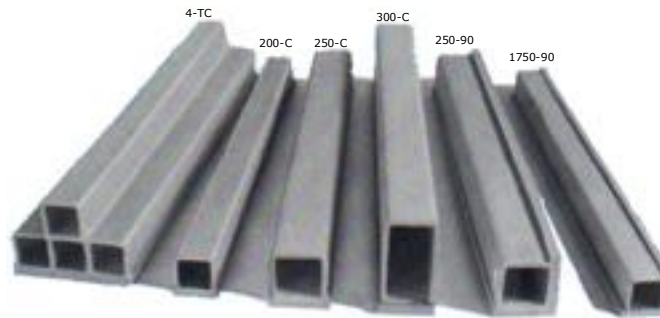
Meets Boeing MMS 101 specifications

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DATA SHEET

LAMINATED STRUCTURAL TUBING

MAXIMUM STRENGTH RELIABLE SUPPORT



Quality fiberglass epoxy backup support components, such as structural tubes, are an important part of building checking fixtures, vacuum forming dies or other similar tooling. We provide a complete selection of round and square laminated tubes.

All tubes are made of 7500 treated cloth 38" to 50" wide. They all contain multiple layers of fiberglass or graphite cloth impregnated with epoxy resins. A special rolling process and thorough inspection procedures insure uniform wall thickness in every component. As with our panels, both room temperature and high-temperature materials are available.

Hawkeye also offers graphite tubing as an alternate to graphite honeycomb and flat stock.

Fiberglass Support Tubing 180

Uses

Construction of
tooling support
trusses
Stiffening structures
Operating temp. up to
180°F (82°C)

Sizes

Rnd: 1" to 1 3/4" OD
Sq: 1" to 2 1/2" OD
Other sizes available

Length

8' X 10' Standard
Other sizes available
Other sizes available

Fiberglass Support Tubing 350/425

Uses

Construction of
tooling support
Stiffening structures
Operating temp. up to
425°F (218°C)

Sizes

Rnd: 1" to 1 3/4" OD
Sq: 1" to 2 1/2" OD

Length

8' X 10' Standard
Other sizes available
upon request

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DATA SHEET

LAMINATED STRUCTURAL TUBING MAXIMUM STRENGTH RELIABLE SUPPORT



Carbon Fiber Angles

Made from multiple layers of carbon fiber or fiberglass. Manufactured in a steel die and pressed to give flatness and uniformity. Carbon fiber angles are available for low- temperature operations up to 450° F (232°C).

Uses

To tie in composite tooling plates for basing.

Sizes

1", 2", up to 6"



Carbon Fiber Structural Tubing

Multiple layers of carbon fiber or fiberglass. Impregnated with epoxy resins. Molded and compressed in a closed die for flatness and squareness.

Uses

Stiffening structures for support of composite tooling
Available in 180°F (82°C)
and 400°F (204°C)

Sizes

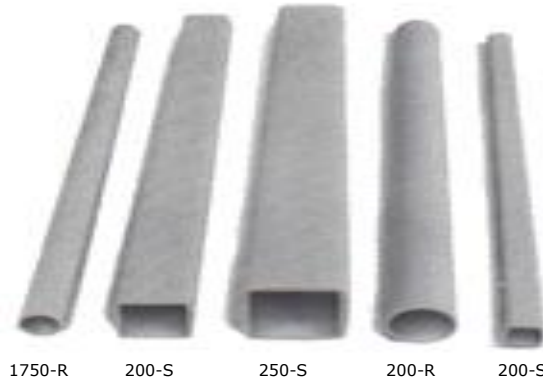
2" and 4" Sq. O.D.

DATA SHEET

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LAMINATED STRUCTURAL TUBING

MAXIMUM STRENGTH RELIABLE SUPPORT



Aluminum Bonded Fiberglass Support Tubing 180°

Our lower temperature square structural tubing is bonded with aluminum casting resins and is intended for operating temperatures up to 180°F (82°C).

Uses

Construction of
tooling support
trusses
Stiffening structures
Operating temp. up to
180°F (82°C)

Sizes

Rnd: 1" to 1 3/4" OD
Sq: 1" to 2 1/2" OD
Other sizes available

Lengths

8' X 10' Standard
Other sizes available
Other sizes available

Support Tubing Bonded with Aluminum Filled Casting Resins. 350°/425°

Our square structural tubing is bonded with aluminum filled casting resin for use in customized configurations which may be used for special operating temperatures up to 350°F (176°C) and 425°F (232°C).

Uses

Construction of
tooling support
Stiffening structures
Operating temp. up to
425°F (218°C)

Sizes

Rnd: 1" to 1 3/4" OD
Sq: 1" to 2 1/2" OD

Lengths

8' X 10' Standard
Other sizes
available upon
request

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