

# Flame Retardant

## Firewall FRB - Flame Retardant

Firewall FRB is a premium grade twin wall board made with a block-copolymer polypropylene resin in a unique flame inhibiting additive package.

## Printing on Flame Resistant Board

CorrugatedPlastics.Net Firewall FRB is made with polypropylene copolymer, a nonabsorbent material, and requires inks formulated for this type of product. Recommended solvent based screen printing inks formulated for CorrugatedPlastics.Net should be used for best appearance and adhesion. Improved UV and water-based inks are becoming available.

CorrugatedPlastics.Net Firewall FRB is corona treated full width on both surfaces. Corona treatment is needed for all printing applications. It is recommended that ink tests be performed prior to production of parts.

Corona treatment also improves the performance of most adhesives.

## Fabrication with CorrugatedPlastics.Net Flame Resistant Board

CorrugatedPlastics.Net Firewall FRB boards can be die cut or slit on standard conversion equipment.

CorrugatedPlastics.Net Firewall FRB boards have a higher mineral content than regular CorrugatedPlastics.Net board due to the flame inhibiting additives package. Higher mineral content usually increases stiffness and decreases flexibility which may require adjustments to die cutting equipment to maintain optimum performance. Die cutting and creasing becomes easier as temperature increases. Recommended die cutting and creasing CorrugatedPlastics.Net flame resistant board at room temperature or warmer for optimum performance.

## Static Build-up

Plastics develop static charge during handling. This build-up becomes most evident during screen printing or converting.

CorrugatedPlastics.Net Firewall FRB boards have a static-free additive which minimizes the build-up by quickly dissipating the charge. The static-free additive requires moisture in the air: therefore, the more moisture in the air the better the system works.

## Abuse Resistance

CorrugatedPlastics.Net Firewall FRB boards can be cleaned with soap and water and most solvents without affecting the sheet properties or appearance.

CorrugatedPlastics.Net board is resistant to dings and punctures.

## CorrugatedPlastics.Net Firewall FRB

Product	Gauge mm	Color	UL94 Class	Typical Applications
Firewall/FRB	2-6 mm	Standard Colors	94V-2	Displays, Trade show booths, heat exchange media, construction, temporary walls

## UL Test Procedures

### UL94 Vertical Burn

Test Method: Two 10-second applications of a 3/4 inch Bunsen flame to a vertical piece of 1/2 inch wide plastic. The total burn time of both applications is added together. Test is repeated 10 times.

Criteria: V-2; Flame extinguishes self within 25 seconds per test strip. Drips are allowed to ignite cotton.

(Note: Firewall FRB extinguishes within 5 seconds. V-0 criteria requires flame extinguish within 5 seconds: however, drips can no ignite cotton.

# General Specifications of Polypropylene co-polymer resin

## Technical Bulletin - CSS-001

Density, g/cc ASTM-D782A-2	0.90
Notched Izod Impact (FT-lbs/in.) ASTM-D256-A @ 70 degrees F	3.0
Tensile Strength at Yield (psi units) ASTM-D638 2in/min.	4000
Elongation at yield (%)	10
Deflection Temp. degrees F 66psi	194
Water Absorption - 24 hrs, % ASTM-D570	0.02
Falling Weight Impact Strength @ -29degree F (ft.lbs.)	23

Coefficient of Linear Thermal Expansion	-30 degrees C to 0 degrees C	12
	0 degrees C to 30 degrees C	14

(MM/MM/C x [10 to the -5th])	30 degrees C to 60 degrees C	21
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Normal temperature performance range	-17 degrees F to 160 degrees F
Melting point	162 degrees C, 324 degrees F

All information has been supplied by resin manufacturers -- CorrugatedPlastics.Net provides this data as a service and makes no warranty of information beyond our control.

## General Specifications -- Explanation of Terms

1. **Density, g/cc, ASTM-D782A:** This test determines the material weight in grams per cubic centimeter, which means 1 cubic centimeter of our polypropylene resin would have an average weight of .9 grams.
2. **Notched Izod Impact, FT-lbs./in., ASTM-D256-A:** This test determines the force used to break a sample of our polypropylene using a pendulum type hammer which is dropped from a standardized distance. A notch is milled into the sample to concentrate stress to that point which promotes a brittle fracture. The tests are reported in terms of energy absorbed per unit of sample width.
3. **Tensile Strength at Yield, lbs./sq.in., ASTM-D638:** This test determines force taken to break/ tear a polypropylene sample at a speed rat of 2 inches/minute and percentage of elongation at time of yield or break. It took 4000 lbs./sq.in. of force with 10% elongation at time of yield or break.
4. **Deflection Temperature, in Degrees, ASTM-D648:** This test determines at what temperature a polypropylene sample exhibits deformation with a specified force applied to the sample bridged across a test apparatus. The test uses a 66 psi load and a 264 psi load and determines deflection temperature at which point that the sample deforms .010 inch.
5. **Water Absorption, % in 24 hrs, ASTM-D570:** This test determines the relative rate of absorption of water by plastics when submersed for a 24 hour period. Samples are preconditioned (dried) before the test. The moisture content is very intimately related to such properties as electrical insulation resistance, dielectric losses, mechanical strength, appearance and dimensions.
6. **Coefficient of Linear Thermal Expansion, (10 to the -5th) in./in./ degrees F, ASTM-D696:** This test measures the change in length of a specimen under controlled conditions within a specified range of temperatures. The temp. ranges given were use and a calculation done to determine the coefficient linear thermal expansion by multiplying the coefficient times 10 to the -5th, times the length of the sample (in.), times the difference in temp. change in Celsius.  
**Example: A sample 144" long @ 54 degrees F differential would be calculated as follows: Coefficient = 6.9, thus: (10 to the -5th in./in./degree F) = (6.9 x [10 to the -5th] x 144" x 54 degrees F) = .000069 x 144" x 54 degrees F = .5365"/144"/54 degrees F, thus, a sheet will expand approximately 1/2' in 144' with 54 deg. F range, (32 deg.F to 86 deg.F).**

For additional Technical information contact CorrugatedPlastics.Net at 888-350-0555, or Email us at: [Sales@corrugatedPlastics.Net](mailto:Sales@corrugatedPlastics.Net)

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