



R&F manufactures a structural foam family with microwave absorbing properties. It is based on the RFRET reticulated foam absorber. RFRET is an excellent free-space absorber, but lacks toughness and environmental resistance. Because RFRET is open-celled, it can be filled with closed-celled structural foam to form RFRIGID. Three standard fillers are used: rigid urethane, flexible urethane and epoxy. The resulting products range from 10 to 20 pounds per cubic foot density and offer a structural, environmentally tough panel. The materials can be molded to shape, machined or bonded into complex covers and shapes.

If skins are applied, rigid lightweight structural panels are formed.

R&F has also developed new types of foam, including syntactic foam and phenolic foams. Contact an R&F applications engineer for more detail on what can be achieved.

APPLICATIONS

The ability to customize the mechanical and electrical properties of the foam allow for a wide range of applications including:

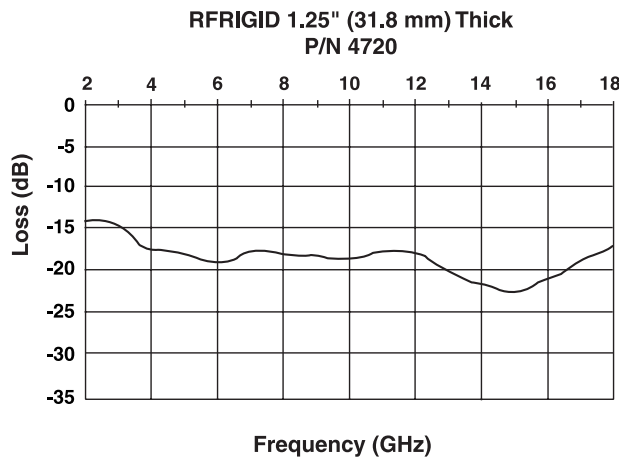
- Absorptive pucks for spiral antenna cavities
- Fairings for vehicles and radars
- Antenna housings
- Lightweight microwave absorbing barriers



TABLE 1: RFRIGID – STRUCTURAL MICROWAVE ABSORBING FOAM PART NUMBERS

Note: Other materials or combinations of attributes are available; please contact sales for assistance.

FIGURE 1.



4700 – 4799 RFRIGID – STRUCTURAL MICROWAVE ABSORBING FOAM

PART NUMBER	THICKNESS IN (MM)	LENGTH IN (MM)	WIDTH IN (MM)	FREQ. RANGE (GHZ) -17DB	MATERIAL
4731	0.420 (10.7)	24.0 (609.6)	24.0 (609.6)	7-18	RU
4740	0.440 (11.2)	24.0 (609.6)	24.0 (609.6)	7-18	FU
4738	0.500 (12.7)	24.0 (609.6)	24.0 (609.6)	7-18	E
4739	0.500 (12.7)	24.0 (609.6)	24.0 (609.6)	7-18	E
4709	0.700 (17.8)	24.0 (609.6)	24.0 (609.6)	5-18	RU
4701	0.750 (19.1)	24.0 (609.6)	24.0 (609.6)	5-18	RU
4710	0.750 (19.1)	24.0 (609.6)	24.0 (609.6)	5-18	RU
4703	1.000 (25.4)	12.0 (304.8)	12.0 (304.8)	3-18	RU
4746	1.000 (25.4)	48.0 (1219.2)	36.0 (914.4)	3-18	E
4711	1.250 (31.8)	24.0 (609.6)	24.0 (609.6)	3-18	RU
4712	1.250 (31.8)	24.0 (609.6)	24.0 (609.6)	3-18	RU
4720	1.250 (31.8)	48.0 (1219.2)	36.0 (914.4)	3-18	E
4730	1.250 (31.8)	24.0 (609.6)	36.0 (914.4)	3-18	RU
4743	1.250 (31.8)	10.0 (254.0)	10.0 (254.0)	3-18	S
4741	1.300 (33.0)	12.0 (304.8)	12.0 (304.8)	3-18	RU
4734	2.000 (50.8)	24.0 (609.6)	24.0 (609.6)	2-18	RU
4736	2.000 (50.8)	36.0 (914.4)	12.0 (304.8)	2-18	RU

ORDERING INFORMATION

Table 1 shows existing standard part numbers for RFRIGID products. From the table, select desired thickness (in ascending order). The part number determines the material type, length, width and frequency range of operation. The other column lists the closed-cell foam that is used to fill the reticulated foam. The thicker the foam material, the broader the frequency ranges of coverage. Performance is nominally –17 to –20dB reflectivity reduction over the frequency range listed.

Available Fill Foam Materials are:

- RU – Rigid Urethane
- FU – Flexible Urethane
- E – Epoxy
- S – Syntactic Urethane

All dimensions shown are in inches (millimeters) unless otherwise specified.

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