

ROSSI Non Metallic Materials are UL Listed, SMACNA Approved & Plenum Rated

In designing and developing our HVAC components, we incorporate a non metallic, polymeric material (Zytel-Nylon) to make our product lines more durable, safer and more user friendly. Rossi non-metallic parts are all manufactured from Polyamide 66 (PA66), Flame Retardant, Glass Reinforced, “Zytel” – the engineering polymer made by Dupont. To ensure Rossi’s compliance with UL, SMACNA and Plenum standards, we have presented our entire product line to both the ICBO and UL engineering staffs. They, in turn, approved the safety standards of our non-metallic material, PA66, and referred us to the following documentation which validates the use of this polymeric material - Polyamide 66 (PA66) - as the material outlined for use in all Non-Metallic Components as specified in the UL 1995 Standards Code for Heating & Cooling (CSA-C22.2 No. 238 UL 1995) with the required flammability rating of 5VA.

Non Metallic Components as validated by UL 1995 and Plenum Ratings

The use of Polymeric Materials in HVAC components is set forth in the Underwriter Laboratories (UL) 1995 Standards Code for Heating & Cooling (CSA-C22.2 No. 238 UL 1995). Specifically, clause 18-2 of this code (p.40) explains the requirements and exceptions for “non metallic materials.” Moreover, UL has developed a test called the “Steiner Tunnel”, which is used to evaluate the safety of non-metallic material in plenum areas. The requirement for passing the Steiner Tunnel test are also outlined in section 18.2.

Paragraph 18.2 - Flame Spread Rating & Smoke Developed Rating

Paragraph 18.2 states:

“Material in a compartment handling conditioned air for circulation through a duct system shall have a flame spread rating of not more than 25, and a smoke developed rating of not more than 50, when tested as specified in Surface Burning Characteristics of Building Materials and Assemblies, CAN/ULC-S102, and their requirements for Standard Method of Tests For Surface Burning Characteristics of Building Materials, UL723. This requirement does not apply to the following.

(c) Miscellaneous small parts such as . . . bushings . . . wire ties, clamps . . . having a total exposed surface are not exceeding 161.29 cm^2 (25 in.^2).

(e) Molded or formed components (not liners) of polymeric materials in such quantities that their total exposed surface area within the compartment does not exceed 0.93 m^2 (10 ft^2).”

All Non-Metallic materials used in Rossi products are exempted from the flame spread rating and smoke developed rating by sub-sections (c) and (e) of Paragraph 18.2 because their total exposed surface area within the compartment does not exceed 161.29 cm^2 nor 0.93 m^2 (10 ft^2).

Paragraph 18.3 - Flammability

Paragraph 18.3 states:

“Polymeric material exempted by item (e) of clause 18.2 shall have a flame spread rating of not more than 25, or shall comply with the requirement of the vertical burning test for classifying material 9405V in accordance with the Standards Tests for Flammability of Plastic Materials in

Devices and Appliances, UL 94 and Test 5V (500W) of Evaluation of Properties of Polymeric Materials, CAN/ CSA-C22.2 No. 0.17 with a flammability rating of 5VA.”

All ROSSI polymeric materials comply with Paragraph 18.3 above and have the requisite flammability rating of 5VA as set forth in the table below.

Polyamide 66 (PA66), Flame Retardant, Glass Reinforced, designated “Zytel” furnished as pellets.

		Min		H	H	RTI		H	D		
		Thk	Flame	W	A	Elec	Mech	V	4	C	
Material Dsg	Color	mm	Class	I	I		Imp	Str	R	5	I
FR50+(f1)	ALL	0.35	V-0	—	—	—	—	—	—	—	—
		0.75	V-0	0	0	130	105	105	—	—	—
	NC	1.5	5VA	0	0	130	115	115	—	—	—
	BK	3.0	5VA	0	0	130	115	120	1	6	2

The table above sets forth the requisite fire rating of 5VA for Polyamide 66 (PA66) or equivalent, Flame Retardant, Glass Reinforced, designated “Zytel” furnished as pellets.

Under paragraphs 18.2 and 18.3 of the UL 1995 Standards Code for Heating & Cooling (CSA-C22.2 No. 238 UL 1995), all non metallic material used by Rossi adheres to the required flammability rating of 5VA and, thus, satisfies all UL requirements, Plenum ratings and SMACNA standards.



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