

# ProDuct - Fume Exhaust System

## ProDuct Guide Specification Fume Exhaust Systems

**Scope:** This Specification encompasses Polypropylene (PP), Flame Retardant Polypropylene (PPs), and Electrically Conductive Flame Retardant Polypropylene (PPs-EL) thickness's, and welding methods used for corrosive exhaust gas ventilation piping. 3" (90mm) thru 24" (630mm).

### 1.0 Material Polypropylene (PP)

Material of construction shall be from Group 1. Class 1, Grade 0 Polypropylene Homopolymer material per ASTM- D4101, Federal Specification L-P-39413 and Military Spec Mil P 461096. PP material to be heat stabilized, UV stabilized and pigmented to RAL 7032.

#### 1.0A Alternate Flame Retardant Polypropylene (PPs)

Material shall be Group 1. Class 1, Grade 0 Polypropylene Homopolymer material per ASTM- D4101, Federal Specification L-P-39413 and Military Spec Mil P 461096. PP material to be heat stabilized, U.V. stabilized and will have a flame retardant additive, and pigmented to RAL 7037. Combustion behavior shall be as follows:

*BI Flame Retardant per DIN 4102  
28% Oxygen Index per ASTM2863  
>380° C Ignition Temperature per ASTM 1929  
Y=0 Class per U.L. 94*

#### 1.0B Alternate Electrically Conductive Flame Retardant Polypropylene (PPs-EL)

Material shall be Group 1. Class 1, Grade 0 Polypropylene Homopolymer material per ASTM- D4101, Federal Specification L-P-39413 and Military Spec Mil P 461096. PP material to be heat stabilized, U.V. stabilized, will have a flame retardant additive, and will feature an electrically conductive particles which discharge static per DIN 4102. Color shall be Black.

### 1.1 Duct

Shall be seamless, extruded from the specified material and shall have uniform, consistent wall thickness and roundness. Wall thickness as detailed in paragraph 1.4.

### 1.2 Fittings

All directional fittings shall be molded from the specified material. Mitered and hot air welded fittings are not allowed except for assemblies which are not manufactured as a molded component. Fittings and coupling shall have socket ends which fit snugly around the entire periphery of the pipe. Joints are completed by back welding with hot air and welding rod.

### 1.3 Welding rod

Welding rod shall be the same material as the pipe and fitting.

#### 1.3.1 Use of Welder

Welding is to be performed using a hot air welder having a source of clean dry air. Compressed air shall not be used for welding.

### 1.4 Wall Thickness

Minimal Wall thicknesses will be as follows:

<u>Diameter</u>	<u>Thickness</u>	<u>Diameter</u>	<u>Thickness</u>
3" (90mm)	3.0mm	14" (355mm)	5.0mm
4" (110mm)	3.0mm	16" (400mm)	6.0mm
6" (160mm)	3.0mm	18" (450mm)	7.0mm
8" (200mm)	3.0mm	20" (500mm)	8.0mm
10" (250mm)	3.5mm	24" (630mm)	10.0mm
12" (315mm)	5.0mm		

### 2.0 Static Loading

Duct and fittings shall be capable of a maximum 1 bar (14.5psi) static pressure and a maximum of 0.5 bar negative static pressure.