

RLPP721 ORANGE

RLPP721 Orange is a Polypropylene (PP) Compound specifically developed for rotational lining of metal vessels, valve bodies and pipelines. It has been compounded with an orange pigment to differentiate from other polymers used for lining.

It meets the pass requirements when tested to reference U.S. 21 CFR F.D.A. Regulation Part 177.1520 Clause 3.1a.

It has excellent processability and its enhanced properties allow it to be used in demanding applications requiring high levels of ESCR, chemical resistance and continuous operation at temperatures up to 100°C.

FEATURES:

- **An excellent balance of high stiffness & impact**
- **Good Temperature Resistance (dry & wet)**
- **High FNCT / ESCR and good chemical resistance**
- **Rated > UV12**
- **High elongation at failure.**

PROCESSING GUIDELINES:

- Oven temperature ~ 300⁰C to achieve mould surface temperature > 245⁰C
- PIAT 225⁰C –235⁰C
- Rotation similar to LMDPE
- Ensure metal surface is clean, sand blasted and degreased
- If lining stainless steel, a primer must be used
- Cool evenly and slowly to optimise mechanical properties

OBSERVATIONS:

- Lower shrinkage than PE.

TYPICAL APPLICATIONS:

- Chemical tanks, fittings, flanges, pipes
- Protection against corrosion

Properties	Conditions	Units	Nominal Values	Testing Methods
Physical				
Melt Flow Rate	230 ⁰ C	g/10 min	14	ISO 1133
Density ²		g/cm ³	0.900	ISO 1183
Mechanical & Thermal				
Tensile stress ¹	At yield	MPa	22	ISO 527-2
Tensile strain ¹	% At yield	%	5	ISO 527-2
	% At break	%	>300	
Tensile Modulus ¹		MPa	1100	ISO 527-2
Flexural Modulus ¹		MPa	1100	ASTM D790
FNCT ² 2% Ige *	5MPa @ 50 ⁰ C	Hours	>300	ISO16770 10x10mm x 1.6mm notch
	6MPa @ 50 ⁰ C	Hours	170	
ESCR ¹	2% Igepal *	Hours	> 1000	ASTM D1693
Shore D Hardness ¹			62	ASTM D2240
HDT ¹	0.455 MPa	Deg C	115	ISO 75-2 4mm Edgewise
HDT ¹	1.82 MPa	Deg C	62	
Poisson Ratio			0.44	ISO 527-2

Notes: ¹ Roto molded

² Compression molded

* Or equivalent

Bonding to steel:

Salee conducted internal testing of 3 roto industry commercially available PE grades, one of which can be considered the best available, alongside **RLPP721 Orange** according to ASTM D3167 “Floating Roller Peel Resistance of Adhesives”.

Conditions:

Mechanical properties test (Tensile) by Universal Testing Machine

Model: LLOYD LR10K

Sample size: SPECIMEN (ASTM D3167)

Load cell: 10KN

Test speed: 152 mm/min

Test Type: Peel (90° & 180°)

Samples were tested with a ‘sand blasted’ surface as well as a solvent wash only.

RLPP721 Orange exhibited excellent bond strength under all conditions, no peeling of the polymer from the metal was observed. The best commercial PE yielded similar results.

Important: *The information contained in this document is of a general nature only and is intended to provide an indication of the potential properties and benefits of a particular polypropylene compound. The statistical and other information provided in this document has been determined in laboratory test conditions. Accordingly, there may be differences in performance in a production environment including having regard to the materials used. The information contained in this document should not be used as a sole basis for production or manufacturing purposes. Independent testing verification and independent professional advice should be obtained before making a decision to use any product or to apply any method or process. To the full extent permitted by law, PSD Rotoworx Pty Limited (ACN 166 016 244) (“PSD Rotoworx”), its related entities, their directors and employees: (i) give no warranty or representation that the information contained in this document is accurate and complete in every particular, and (ii) disclaim all liability for reliance on the information contained in this document.*
