

# 1003

## SEMI-HARD NATURAL RUBBER

March 2015

**Polycorp 1003** is a black general purpose 90A durometer semi hard lining manufactured with or without tie gum. It provides excellent chemical and temperature resistance and superior performance in water treatment equipment. The lining is FDA compliant as per 21CFR177.2600. Operating temperature range is from 41°F (5°C) to 185°F (85°C).

**APPLICATION NOTES:**

- **Skive** – use closed skive construction
- **Repair** – Same or 1038. Refer to section 11 of application manual
- **Cured Durometer** – Shore A durometer on top surface: 90 ± 10. Shore D durometer on top surface: 45 ± 10.
- **Spark Test** – Refer to section 13 of the Application Manual

**ADHESIVE NOTES:**

See Section 6 of the Polycorp Rubber Lining Application Manual for specific cementing / adhesion notes. For proper adhesion, temperatures must be over 60°F (15°C) and must not exceed 120°F (49°C). Use adhesives in well ventilated area and always consult the material safety data sheet for specific precautions.

**CURING:**

Cure time adjustments may be required to compensate for specific conditions. See Section 10 of the Application Manual for detailed instructions. All recommendations below are for lining thicknesses up to ¼”.

**Autoclave Method** – 3/16” and 1/4” thickness:  
Slow rise to 250°F/121°C (15 psi). Hold 2 ½ hours @ 250°F/121°C (15 psi). Cool down under pressure.

**Internal Steam Method** – 3/16” and 1/4” thickness:  
Slow rise to 250°F/121°C (15 psi). Hold 5 hours @ 250°F/121°C (15 psi). Cool down under pressure

**Atmospheric Steam Method** – Up to 1/4” thickness:  
Minimum of 24 hours @ 212°F/100°C. Lower durometer readings may result with this type cure.

Coat	Polycorp Adhesive	Approved Equivalent
1 <sup>st</sup> Coat on Metal	C-90 Primer	Chemlok 289
2 <sup>nd</sup> Coat on Metal	C-91 Intermediate	Chemlok 290
3 <sup>rd</sup> Coat on Metal	C-202S Tack	Chemlok 286
4 <sup>th</sup> Coat on lining	C-202S Tack	Chemlok 286

## STORAGE:

Store in a cool, dry area.

Shelf Life	
Stored below 50°F (10°C)	180 days
Stored between 51 and 70°F	90 days
Stored between 71 and 90°F	45 days
Do not store above 90°F (32°C)	

Depending on storage conditions it may be possible to use rubber linings beyond the recommended shelf life however additional testing must be completed. Please contact Polycorp for recommended test procedures. A sample of the rubber lining can also be sent back to Polycorp for verification.

Storage, handling and application methods must conform to the Polycorp Rubber Lining Application Manual.

## TYPICAL PROPERTIES:

Property	Value	ASTM Test Method
Hardness (Face) (points)	90 A ± 10	D2240
	45 D ± 10	
Tensile Strength (min, psi)	1500 psi	D412
Elongation at Break (min, %)	60	D412
Specific Gravity	1.252	D297
Adhesion to Metal (min, lbf/in)	25	D429
Operating Temperature Range for Optimum Service Life	41°F (5°C) to 185°F (85°C)	N/A

All physical property values developed and measured using a press-cured sample sheet prepared in accordance with ASTM D3182.

## PRECAUTIONS:

- This is a hard rubber compound. Over curing will cause brittleness.
- Do not use in transport equipment. This lining may not be suitable for equipment that may be exposed to extremely low temperatures. If temperatures will be below 32 °F/0 °C, contact Polycorp with all the service conditions for a specific recommendation.
- Cool down to 120 °F/49 °C before releasing pressure during pressure cure.
- Do not ship lined tank below 20 °F.