

Well Construction

Cementing Technologies

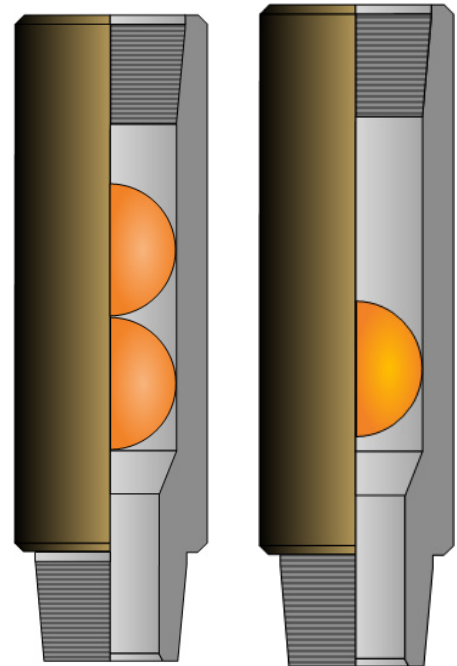
Wiper Balls

Expro offers foam and high-performance urethane wiper balls designed to separate fluids and wipe drill pipe or tubing to clean cement, fluids, and debris from the inside of the pipe. The wiper balls are made from natural rubber or urethane and can be used in a wide range of temperatures.

The wiper balls can be loaded and launched from Expro's 6-5/8" Wiper Ball Drop Sub. The sub allows foam, polyurethane, and rubber wiper balls to be pre-loaded into an enlarged-ID handling sub and made-up to the drill pipe for quick deployment into the landing string after completion of cementing operations.

Features

- Wipes drill pipe or work string so that cement or scale does not remain in the ID to ensure clean drill pipe
- May be pumped ahead of or behind cement for fluid separation and to wipe sheath deposition from the work string ID reducing the risk of cement contamination
- Able to pass through ID restrictions such as mechanical setting tools, dart catchers, diverters, and liner running tools to ensure continuous circulation
- Material composition offers compatibility with all drilling fluids allowing for operation in both high temperature and high pressure environments
- High-performance urethane wiper ball has a custom-created cell and strut size for enhanced performance and longevity resulting in better wiping performance and fewer size variations
- Foam wiper ball has a parting stretch of 380% to 440% allows the balls to pass through small restrictions without being damaged





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Foam wiper ball specifications	
Material	Polyisoprene (rubber) natural
Longevity	Extended-life rubber formula
Parting strength	380% to 440%
Swelling	5% in water
Deformation pressure	32 psi - 65 psi (22 N/cm ² - 45 N/cm ²)
Temperature	-40°F to 250°F (-40°C to 121°C)
Breaking elongation	440%
Abrasive resistance	Good
Elastic to	-40°F (-40°C)
Material	Natural rubber vulcanized at 311°F (155°C)
Flammability	High flammability, burns with soot
Stability	Not available with acids, alkalis, oils, fats and solvents

Size	Part no.	Recommended wiping range (ID in inches)	Minimum restriction (inches)
3.00	0107164	1.00 to 2.50	0.50
4.00	0107165	1.25 to 3.25	0.63
5.00	0103204	1.75 to 4.00	0.75
6.00	0103203	2.00 to 4.75	0.88
7.00	0103205	2.25 to 5.50	1.00
8.00	0103206	3.00 to 7.00	1.38

Urethane wiper ball specifications					
Size (in)	Part no.	Color	Wiping range (ID in inches)	Minimum restriction (inches)	Orange "foam" rubber ball equivalent (inches)
3.00	0106657	Yellow	1.63 - 2.75	1.63	4
4.00	0106658	Green	1.75 - 3.75	1.75	5
5.00	0106451	Blue	1.88 - 4.75	1.88	6
6.00	0106452	Gray	2.00 - 5.75	2.00	7
7.00	0103202	Gold	2.38 - 6.75	2.38	8

Hardness, Shore A	ASTM D2240	49
50% modulus, psi	ASTM D412	184
100% modulus, psi	ASTM D412	236
Tensile, psi	ASTM D412	259
Elongation, %	ASTM D412	234
Tear, Die "C", psi	ASTM D624	91