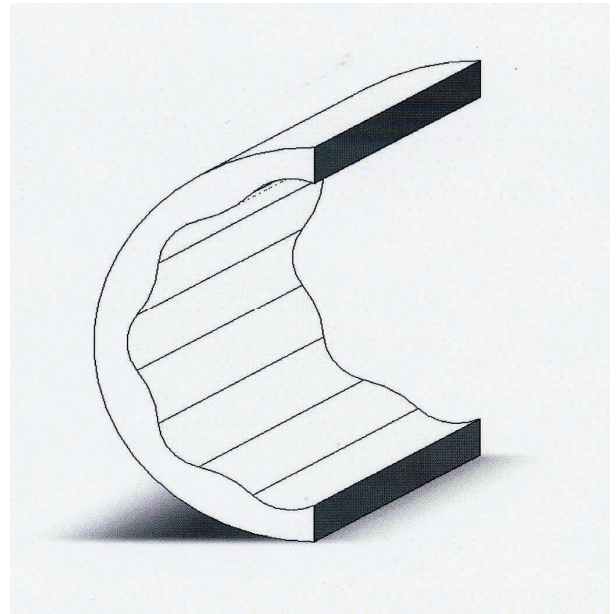


WAVE LINER™ ABRASION RESISTANT, ANTI FRICTION, CONTROL CABLE LINER

DESCRIPTION

Markel WAVE LINER™ Liner employs AR-650™ Liner material for moderate and heavy duty, high temperature applications where initial efficiency is critical and the long life of AR-650™ is also required. AR-650™ is a PTFE based filled material with the basic anti-slip stick characteristic provided by PTFE. The filler is a proprietary high temperature polymeric compound that increases the hardness and extends the service life of the liner compared to natural PTFE. The liner does not support combustion.



CHARACTERISTICS

WAVE LINER™ Liner technology features a sinusoidal progression of touch points around the periphery of the liner. This reduction of touch points yields a significantly higher initial efficiency compared to the original AR-650™ round surfaces. The core wire is less able to develop vibration noise while the efficiency remains high because of minimized contact between core and liner.

APPLICATIONS

Markel WAVE LINER™ Liner is ideally suited for accelerator, clutch and manual and automatic transmission shifter cables. It provides smooth operation with high initial and long term efficiency in difficult routings. The exceptionally high operating temperature characteristic allows the cable to be routed near manifolds and exhaust systems.

KEY FEATURES

- Markel WAVE LINER™ Liner Yields Initial Efficiency of 88.5%
- Average Efficiency 90% through 1,000,000 cycles
- Noise Reduction by Limiting of Core Wire Vibration
- PTFE Base Eliminates “slip stick”
- Continuous Use Temperature 200°C
- Moderate and Heavy Loads
- Non-burning– UL 94 -V0

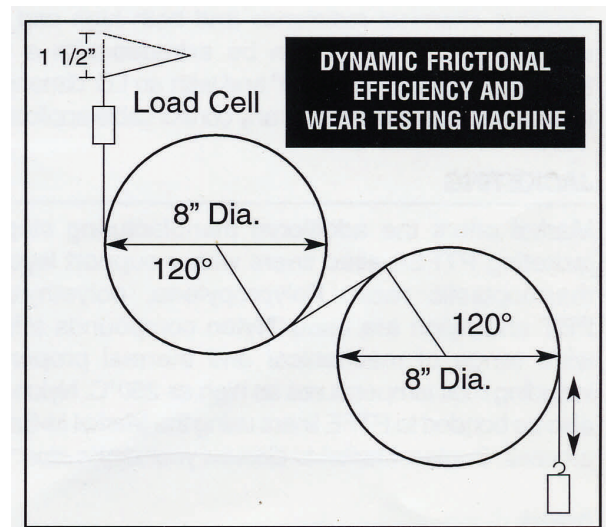
CHARACTERISTICS OF AR-650™ WAVE LINER™ CONTROL CABLE LINER

PROPERTY	TEST METHOD	PERFORMANCE
Continuous Use Temperature		200°C
Specific Gravity	ASTM D 792 Method A-1	2.11
Durometer “D”, 15 Seconds	ASTM D 676	55
Tensile Strength at Break	ASTM D 638	38.8 MPa (5,623 psi)
Elongation at Break	ASTM D 638	313%
Flammability	UL94	V-0 (non-burning)
Chemical Resistance	Imersion, 1 Week @ °25C	No Swelling or Loss of Mechanical Properties, See List Below
Color		Yellow

Chemicals Tested: Hydraulic Fluid, Hydrocarbon Solvents, Brake Fluid, Lubricants, Alkaline and Acidic Aqueous Solutions

TYPICAL LIFE CYCLE PERFORMANCE*

Test Length	500,000 Cycles
Spring Load	26.7 80 n 6-18 Lbs.
Initial Efficiency	88.5%
Final Efficiency	90%
Loss Factor K, In3- min./lbs.-ft.-hr. (tested dry)	7.5
Ultimate Cycle Life	> 1,000,000 Cycles



*With E-155 Silicone Lubricant (Wacker Silicone, Adrian, MI) Typical values not intended for design.