

Natural Rubber Jacketed Surface Mining Cable



Nexans AmerCable is now offering a new choice in jacket materials for specialized mining cable applications. A Natural Rubber jacketed cable has been added to the product mix for AmerCable, and is targeted at the surface mining industry, where excellent resistance to abrasion, cuts, and punctures are paramount. This CSA listed product also offers the end user with a cable capable of withstanding temperatures as low as -60 degrees Celsius – the lowest of current mining cable offerings.

As stated, this jacket is based on Natural Rubber, one of the first polymers identified for use in rubber parts. Natural rubber offers several advantages over current CPE, Hypalon,[®] or Neoprene[®] based products in toughness and overall damage resistance. Compound tensile strengths of natural rubber approach 4000 psi (27.5Mpa); with tear values nearly double that attainable with standard CPE, Hypalon,[®] or Neoprene[®] jacketed materials. A brief summary of typical values taken from SHD-GGC mining cable is listed in Table I.

| Property | Natural Rubber | CSA Specification |
|----------------|----------------|-------------------|
| Tensile (psi) | 3800 | 3500 min |
| Elongation (%) | 450 | 300 min |
| Modulus (200%) | 800 | 500 min |
| Tear (lbs) | 100 | 40 min |

Natural Rubber also offers benefits in abrasion resistance as compared to other materials commonly used in mining cable jackets. Table II lists standard abrasion resistance numbers for a variety of materials commonly used as jackets in the mining industry. These values were measured per ISO 4649, with lower numbers indicating higher resistance to abrasion.

| Material | Abrasion Index |
|---------------------------|----------------|
| EHD CPE | 70 |
| EHD Neoprene [®] | 221 |
| EHD Hypalon [®] | 74 |
| Competitive HD CPE | 284 |
| EHD Natural Rubber | 56 |
| Thermoplastic Urethane | 15 |

The balance of excellent tensile and tear values, resistance to abrasion, and flexibility to -60°C provides this product with the properties required for tough, surface mining applications.

For elevated temperatures, this jacket has been specially designed to resist attack from UV, oxidation and other atmospheric components that typically degrade natural rubber jackets. Testing of the cable jacket at CSA has confirmed that this material meets the elevated temperature, weather resistance and all other requirements of the current CSA specification.

Nexans AmerCable can now offer a choice for end users for cables used in highly abrasive environments. The Natural Rubber jacketed product offers the end user improved damage resistance in highly abrasive service – while providing a cable design able to withstand temperatures as low as -60 degrees Celsius.

