

Butyl Tape

Application Note

Significant Issue:

Interfibe RT cellulose fibers are used as a reinforcing thixotrope in adhesives and sealants. They provide desirable flow control characteristics that approach those imparted by asbestos. Although RT fibers are not a 1:1 “drop-in” replacement for asbestos, they do have these properties in common with asbestos: good thixotropy imparted to the formulated caulk; the ability to reinforce the bulk caulk and the ability to produce caulks without excessive surface texture.

Customer Objectives:

- Replace asbestos or other high cost fibers
- Obtain lower formulation costs through the reduction of other raw materials
- Maintain product flexibility, sag resistance and flow

Interfibe Solution:

By formulating with Interfibe RT fibers, the customer receives economic benefit by reducing the use of more costly synthetic fibers and benefits environmentally through the use of a safe, non-hazardous alternative to asbestos.

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Butyl Based Tape Sealant Formulation Using Interfibe RT

DESCRIPTION

A butyl tape sealant containing asbestos fibers was formulated to replace the asbestos fibers with RT fibers.

The control tape sealant is a non-flow high performance butyl formulation. This material contained a significant amount of asbestos (16%) and is the type of material used in automotive and construction glazing. The goal was to replace the asbestos with RT fibers while maintaining similar performance characteristics.

The asbestos-free formulation was achieved by replacing the 16.1% of asbestos with 5.6% RT fibers and 10.5% ground limestone. The resulting materials were made into 3/8-in. diameter round butyl tapes and tested against standard evaluation procedures. The results can be summarized as follows for the two formulations:

- there were no apparent appearance differences, and
- at room temperature, the materials had similar internal cohesive strengths and hardnesses as indicated by the penetrometer, compression and yield testing.

Formulations

	BC-1 (control)	BC-2
Butyl rubbers	18	18
Carbon black	15	15
Ppt. silica	3	3
Talc	20.9	20.9
Asbestos (7RF02)	16.1	----
RT fibers	----	5.6
Polybutenes	10	10
Parafinic oil	17	17
Ground limestone	----	10.5

Experimental Results

	BC-1 (control)	BC-2
Appearance		
Surface	8	8
Gloss	8	8
Uniformity	8	8
Penetrometer	8.3 mm	8.5 mm
Force to compress	13.9 psi	12.2 psi
Melt index	1.8 g/min.	3.9 g/min.
Flow	0.0004 in.	0.0005 in.
Yield	8.6 psi	10.6 psi

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