

3M Advanced Materials Division

3M™ Nextel™ Ceramic Woven Tapes 312 and 440

Introduction

3M™ Nextel™ Ceramic Woven Tapes 312 and 440 are made from continuous Nextel alumina-boria-silica fibers.

Nextel ceramic woven tape 312 retains strength and flexibility at continuous temperatures of up to 2192°F (1200°C).

Nextel ceramic woven tape 440 retains strength and flexibility at continuous temperatures of up to 2372°F (1300°C).

Features and Benefits

- Non-oxidizing
- Non-hygroscopic
- Good chemical resistance
- Low thermal conductivity
- Good abrasion resistance
- Fire and flame resistant

Typical Applications

Application	3M™ Nextel™ Ceramic Woven Tape	
	312	440
Continuous Use Temperature*	2192°F (1200°C)	2372°F (1300°C)
Aerospace Cable and insulation wrap, fire zone cable protection, flame barrier, thermal shields		
Industrial Cable and insulation wrap, hose protection, fire zone cable protection, blanket application		

*40% fiber strength retention tested at room temperature after 100 hours soak.

Important Processing Information

Heat Cleaning: Nextel ceramic woven tapes 312 and 440 are coated during manufacture with sizings or finishes to serve as aids in textile processing. The sizings or finishes consist of organic polymers which, when first heated, may ignite and/or decompose to potentially hazardous byproducts or process contaminants. See Safety Data Sheet or contact 3M for more information.

Heat Treating: If Nextel ceramic woven tapes 312 are to be subjected to hot humid environments for extended periods of time (e.g., 95°C @ 100% relative humidity for ten days), heat treating is necessary. Heat treatment changes the crystal structure of the fiber preventing physical degradation in these conditions.

Heat cleaning or heat treating of Nextel ceramic woven tape is a service offered by 3M.

Additional Information

For additional information about 3M Nextel ceramic woven tapes, please call 1-800-367-8905, or contact your local 3M representative.



Typical Properties (Not for specification purposes.)

3M™ Nextel™ Ceramic Woven Tapes 312 and 440

Style	Tape Width		Weight (sized)		Thickness (sized)		Breaking Strength without Sizing*	
	inch	cm	oz/yd	g/m	inch	mm	lbs/in	kg/cm
3M™ Nextel™ Ceramic Woven Tape 312, Style AP-18								
AP-18 1" Tape	1.0	2.5	0.31	9.6	0.020	0.51	130	23
AP-18 1½" Tape	1.5	3.8	0.45	14.0	0.019	0.48		
AP-18 2" Tape	2.0	5.1	0.60	18.6	0.019	0.48		
3M™ Nextel™ Ceramic Woven Tape 440, Style BP-18								
BP-18 2" Tape **	2.0	5.1	0.67	20.8	0.020	0.51	130	23

Input yarn for Style AP-18 is 900 denier 3M™ Nextel™ Plied Yarn 312, 1/2, 1.5 z.
 Input yarn for Style BP-18 is 1000 denier 3M™ Nextel™ Plied Yarn 440, 1/2, 1.5 z.

* Test method ASTM D5035; tests conducted at room temperature.

** Available only by special order.

Note: When installing tape, a 50% overwrap by width is recommended.

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