

ADVANCED



## 3M™ Thinsulate™ Insulation **Featherless** (Type FL 700)

An innovative, animal-free alternative, this loose-fill insulation mimics natural feathers when dry, and, when wet, preserves warmth better than down.

### features

- 100% Polyester
- Mimics look & feel of down
- Washable
- Loose-fill insulation allows for custom gram weights



Warm



Performs  
when wet



Lightweight



Highly  
breathable

### ideal for

- Performance apparel
- Accessories
- Outerwear
- Gloves
- Bedding

### certifications



## partner benefits

When you choose 3M™ Thinsulate™ Insulation, you're choosing a world-renowned product paired with worldwide service. Partner with us and discover the power of our:

### global locations



With a **local presence in more than 70 countries**, we can easily work with you and your mill, supporting your production needs from start to finish.

### technical expertise



As a company driven by science, we can perform **more than 20 comprehensive tests on our insulation**, carefully evaluating critical features such as compression, thermal resistance, water absorption, and more.

### brand



Recognized as a world-class brand, we'll work with you to **support your marketing and sales efforts.**

Basis Weight of Insulation (g/m <sup>2</sup> )	Construction Method	Channel of Quilt Spacings					
		1.5" x 1.5"	3" x 3"	4" x 4"	2" x 12"	3" x 12"	4" x 12"
400	Direct Sew						
300	Direct Sew						
200	Direct Sew		Reccommended				
200	Channel Fill						
100	Direct Sew				Not Reccommended		
75	Direct Sew						

Channel Fill with Horizontal Direct Sew Lines*				
Quilt Line Spacing	Construction Method	Basis Weight (g/m <sup>2</sup> )	Thickness, cm per ASTM D5738 @0.002 psi (0.014 kPa)	Thermal Resistance, clo per ASTM C 518 (at listed thickness)
1.5" x 1.5"	Channel Fill	200	1.5	2.3
1.5" x 6"	Channel Fill	200	1.9	2.7
2" x 6"	Channel Fill	200	2.4	3.2
2" x 12"	Channel Fill	200	2.5	3.3
3" x 3"	Channel Fill	200	2.3	3.1
4" x 4"	Channel Fill	200	3.0	4.1



**Want more protection from the elements?** Ask us about the Scotchgard™ Protector that can further enhance the performance needs of your apparel.



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\*Results are based on internal 3M testing of 3M™ Thinsulate™ Featherless Insulation which was lofted using hand carders and quilted in the indicated patterns and filling techniques between a shell and lining fabric. Quilting data are based on limited produced samples and are included here for illustrative purposes only and do not mean that the results obtained by a garment manufacturer will be the same with these or other fabric materials. The quilting and filling conditions used by the garment factory, as well as other variables, may influence results. Manufacturers need to conduct their own testing using their own shell and lining fabrics to determine suitability for their application(s), and whether the garments meet any particular standard or specification.

**The Future Of Performance. Sustainably Driven. Scientifically Backed.**