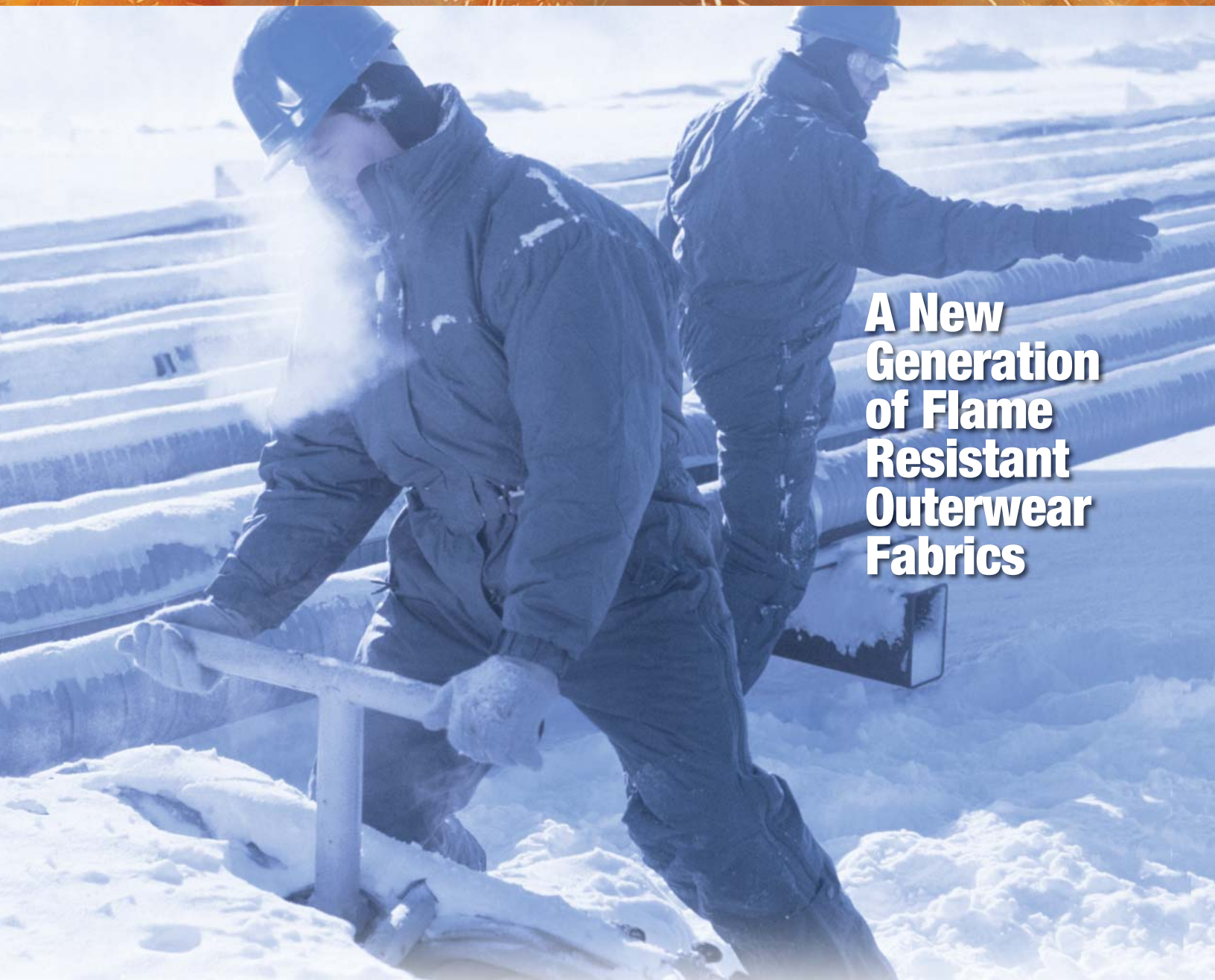


 **UltraSoft**®

Thinsulate™
INSULATION
FR

LIGHTER WEIGHT • MORE WARMTH • ENHANCED FLEXIBILITY



**A New
Generation
of Flame
Resistant
Outerwear
Fabrics**

 **WESTEX**™

A WORLD LEADER IN FLAME RESISTANT FABRICS

UltraSoft®

Thinsulate™
INSULATION
FR

LIGHTER WEIGHT • MORE WARMTH • ENHANCED FLEXIBILITY



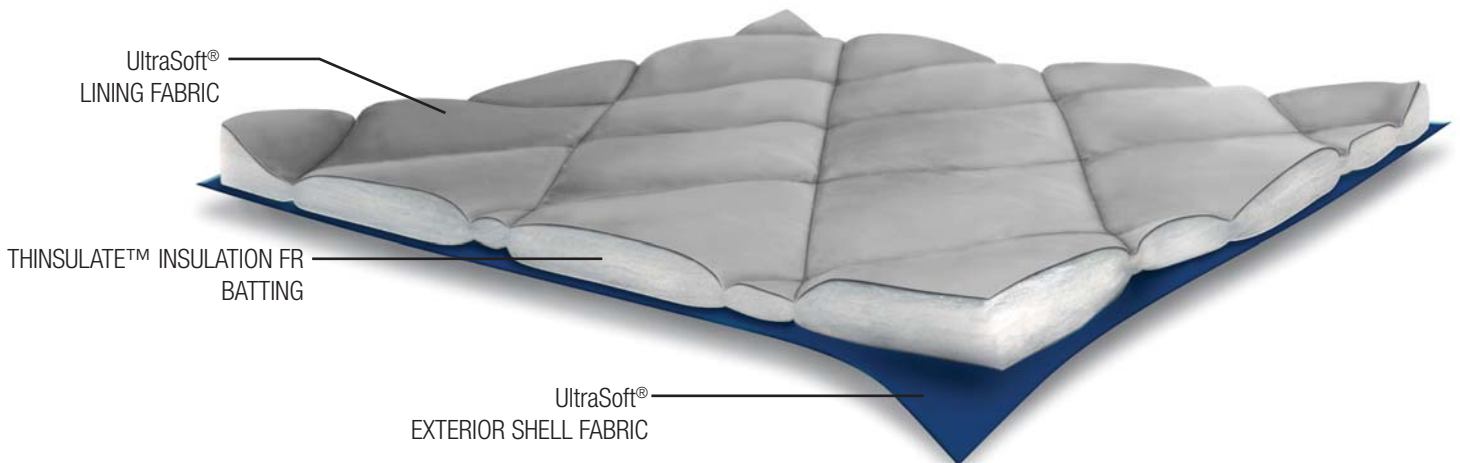
3M Thinsulate™ Insulation FR Quilted to Westex UltraSoft®

Westex, a world leader in flame resistant fabrics, and 3M, a leader in nonwoven fiber technology, have teamed up to introduce Thinsulate™ Insulation FR quilted to UltraSoft®. With this revolutionary new product, wearers can achieve lightweight warmth. And the Thinsulate™ Insulation FR has exceptional thermal weight efficiency, making it ideal for outdoor environments where workers need to tackle tough jobs in comfort.

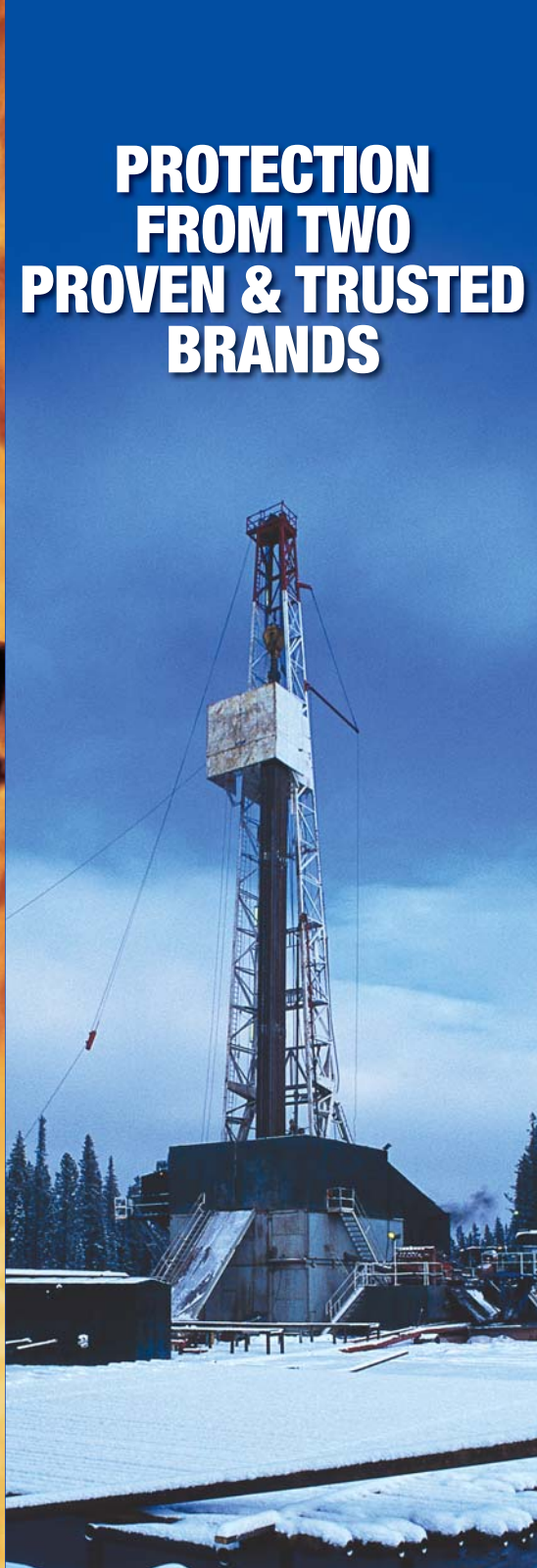
Made from a flame resistant blend of aramid, modacrylic and polyester fibers, Thinsulate™ Insulation FR quilted to UltraSoft® is designed as a mid-loft product with quality drape characteristics to enhance garment flexibility and aid in garment styling. In addition, the lofty fibrous webs trap more air and contain more of the body's radiant heat than higher-density needle-punched webs, thereby maintaining warmth and breathability. UltraSoft® flame resistant fabrics offer guaranteed softness, comfort and flame resistance for the life of the garment. With millions of garments in service worldwide for over a decade, UltraSoft® fabrics have a strong reputation for providing an excellent balance of protection, comfort and value.

Workers in utilities, electrical maintenance (NFPA 70E), oil and gas, and many other industries can benefit from Thinsulate™ Insulation FR and UltraSoft® garments. By wearing superior fabric, they can achieve more warmth in a lighter-weight garment. In addition, as highlighted on the opposite page, Thinsulate™ Insulation FR quilted to UltraSoft® provides excellent protection from electric arc flash and flash fire.

A NEW GENERATION OF FLAME RESISTANT OUTERWEAR FABRICS



**PROTECTION
FROM TWO
PROVEN & TRUSTED
BRANDS**



FLASH FIRE PROTECTION • ARC FLASH PROTECTION

 **UltraSoft**[®]

Thinsulate[™]
INSULATION
FR

Protection from Electric Arc Flash & Flash Fire

ELECTRIC ARC FLASH PROTECTION

MULTI-LAYER ATPV SYSTEMS

Tested at Kinectrics per ASTM 1959 Standard Test Method for Determining the Arc Rating of Materials for Clothing

Exterior Shell Fabric	Quilted Lining	ATPV
UltraSoft® Style 301 7oz (237g)	Style 751 Batting= Thinsulate™ Insulation FR "FR 120" 3.5oz (120g) Face Cloth= UltraSoft® Style 341 5.5oz (186g)	37.2 cal/cm²
	Style 752 Batting= Thinsulate™ Insulation FR "FR 150" 4.4oz (150g) Face Cloth= UltraSoft® Style 341 5.5oz (186g)	37.6 cal/cm²
	Style 753 Batting= Thinsulate™ Insulation FR "FR 200" 5.9oz (200g) Face Cloth= UltraSoft® Style 341 5.5oz (186g)	44.1 cal/cm²
UltraSoft® Style 451 9oz (305g)	Style 751 Batting= Thinsulate™ Insulation FR "FR 120" 3.5oz (120g) Face Cloth= UltraSoft® Style 341 5.5oz (186g)	41.0 cal/cm²
	Style 752 Batting= Thinsulate™ Insulation FR "FR 150" 4.4oz (150g) Face Cloth= UltraSoft® Style 341 5.5oz (186g)	44.6 cal/cm²
	Style 753 Batting= Thinsulate™ Insulation FR "FR 200" 5.9oz (200g) Face Cloth= UltraSoft® Style 341 5.5oz (186g)	48.0 cal/cm²
UltraSoft® Style 961 11oz (372g)	Style 751 Batting= Thinsulate™ Insulation FR "FR 120" 3.5oz (120g) Face Cloth= UltraSoft® Style Style 341 5.5oz (186g)	46.5 cal/cm²
	Style 752 Batting= Thinsulate™ Insulation FR "FR 150" 4.4oz (150g) Face Cloth= UltraSoft® Style 341 5.5oz (186g)	47.5 cal/cm²
	Style 753 Batting= Thinsulate™ Insulation FR "FR 200" 5.9oz (200g) Face Cloth= UltraSoft® Style 341 5.5oz (186g)	50.7 cal/cm²
UltraSoft® Style 881 8oz (271g)	Style 751 Batting= Thinsulate™ Insulation FR "FR 120" 3.5oz (120g) Face Cloth= UltraSoft® Style 341 5.5oz (186g)	36.0 cal/cm²
UltraSoft® with EPIC® Style 452 10oz (339g)	Style 752 Batting= Thinsulate™ Insulation FR "FR 150" 4.4oz (150g) Face Cloth= UltraSoft® Style 341 5.5oz (186g)	56.5 cal/cm²
UltraSoft® with EPIC® Style 452 10oz (339g)	Style 753 Batting= Thinsulate™ Insulation FR "FR 200" 5.9oz (200g) Face Cloth= UltraSoft® Style 341 5.5oz (186g)	57.3 cal/cm²

FLASH FIRE PROTECTION

FLASH FIRE MANIKIN RESULTS

Tested at the University of Alberta's independent laboratory per the ASTM F1930 Standard

Exterior Shell Fabric	Quilted Lining	Total 2nd- and 3rd-Degree Body Burn ASTM F1930 Std. Test Method 2-second exposure
UltraSoft® Style 301 7oz (237g)	Style 751 Batting= Thinsulate™ Insulation FR "FR 120" 3.5oz (120g) Face Cloth= UltraSoft® Style 341 5.5oz (186g)	8.73%**

*Do not use Thinsulate™ Insulation FR in constructing apparel intended for NFPA 2112 certification

**Figure includes 7% for the head



 **UltraSoft®**



Ultimate Warmth Matched to Maximum Comfort

Westex typically recommends that wear trials be performed to determine which garment offers the most comfort. However, with cold-weather clothing, results from “clo” testing can also be analyzed to help quantify and compare the amount of warmth an individual garment system can provide.

What is a Clo Value?

Clo is a measure of thermal insulation capability, for apparel insulation (similar to R-value for home insulation). The higher the clo, the warmer the person will be. The colder the environment, the greater amount of clo, or clothing insulation, that will be required to be comfortable at the same activity level.

Technical Definition of Clo: 1 clo is the amount of thermal insulation required for clothing to be comfortable in a normally ventilated room at 70° F (21° C) and <50% humidity in a sitting/resting position.

Measured Properties of UltraSoft® & Thinsulate™ Insulation FR Products in Quilted Applications:

Results are based on 3M testing of Thinsulate™ Insulation FR products quilted in a six-inch diamond pattern. Quilting data is based on a single quilting run for each product and is for illustrative purposes only and does not mean that the final results will be the same with these or other fabric materials. Quilting conditions and variables may influence results.



Exterior Shell Fabric	Quilted Lining	Thermal Resistance (Rcf) ASTM F 1868	
		Clo Value	R-Value
UltraSoft® Style 961 11oz (372g)	Style 751 Batting= Thinsulate™ Insulation FR “FR 120” 3.5oz (120g) Face Cloth= UltraSoft® Style 341 5.5oz (186g)	1.5	1.3
	Style 752 Batting= Thinsulate™ Insulation FR “FR 150” 4.4oz (150g) Face Cloth= UltraSoft® Style 341 5.5oz (186g)	1.7	1.5
	Style 753 Batting= Thinsulate™ Insulation FR “FR 200” 5.9oz (200g) Face Cloth= UltraSoft® Style 341 5.5oz (186g)	2	1.8



Thinsulate™ Insulation FR has lofty fibrous webs that trap more air and contain more of the body’s radiant heat than higher-density traditional needle-punched webs.

THE RESULT:

exceptional warmth and breathability without the weight.

THINSULATE™ INSULATION FR VS. STANDARD MODACRYLIC INSULATION			
Quilted System	TOTAL WEIGHT	Thermal Resistance (Rcf) ASTM F 1868	
		Clo Value	R-Value
Thinsulate™ Insulation FR & UltraSoft® Batting= Thinsulate™ Insulation FR “FR 120” Face Cloth= UltraSoft®	11oz (372g)	1.4	1.2
Standard Modacrylic Quilted System Batting= 100% Modacrylic Face Cloth= 100% FR Cotton	14.1oz (478g)	1.1	0.09

Thinsulate™ Insulation FR & UltraSoft® Quilted System = 28% Lighter Weight & 27% More Warmth



A WORLD LEADER IN FLAME RESISTANT FABRICS

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866.493.7839
WESTEX.COM



WARNING



- Always use the applicable flame resistant shell materials when constructing apparel.
- Do not use in protective apparel for Structural Fire Fighting, Proximity Fire Fighting, Wildland Fire Fighting, Fire Entry, Technical Rescue or other Fire Fighting Operations.
- Do not use in apparel designed for more than momentary, unplanned or accidental exposure to Flames, Heat or Electric Arc.
- Do not use Thinsulate™ Insulation FR in constructing apparel intended for NFPA 2112 certification.
- Always add Proper Care / Laundering Instructions to apparel.
- Always ensure that Thinsulate™ Insulation FR is the only type of Thinsulate™ Insulation used in constructing apparel requiring flame resistance.
- Use of Thinsulate™ Insulation FR in inappropriate applications could increase the severity of injury to the end user.
- Do not use in apparel designed for more than momentary, unplanned or accidental exposure to chemicals or flammable contaminants.

3M and Thinsulate™ are trademarks of 3M

The information in this brochure is based on testing conducted by or conducted on behalf of Westex and represents our analysis of the test results. It is not intended to substitute for any testing that may be unique and necessary for your facility for you to determine the suitability of our products for your particular purpose. Since we cannot anticipate all variations in end-user conditions, Westex makes no warranties and assumes no liability whatsoever in connection with any use of this information. All test results reported are based on standard laboratory tests related to exposure to arcs, flames and heat. The results reported should not be used to predict garment performance in actual fire situations. Consult with the fabric supplier, garment manufacturer and launderer for recommendations of proper cleaning techniques.

UltraSoft® is a registered trademark of Westex Inc.
EPIC® is a registered trademark of Nextec.

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