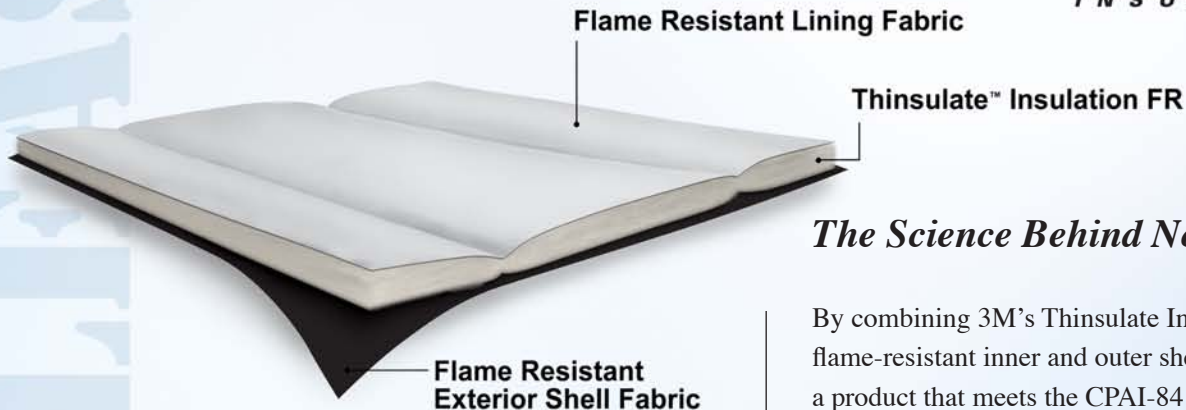


# NORPACR2™

ARCTIC OUTDOOR SHELTER FABRIC

**Thinsulate™**  
INSULATION

**3M**



## *The Science Behind NorpacR2™*

By combining 3M's Thinsulate Insulation FR with a flame-resistant inner and outer shell, Norpac has created a product that meets the CPAI-84 industry standard, a specification for flame-resistant materials used in outdoor fabric shelters. As a trusted brand of lightweight thermal insulation, Thinsulate has been used in outerwear, garments and accessories for almost 30 years. Its lofted, nonwoven fiber construction traps air and retains heat, making the shelter extremely easy to keep warm even in sub-zero environments.

### *Product Test Results:*

NorpacR2™ test results show dramatic heat loss differences between a ice shelter made of NorpacR2™ vs. traditional canvas or a single ply traditional ice fishing shelter. Thermal test results were conducted using a 55 foot refrigerated trailer to create a controlled sub zero environment of -10°F with a wind chill factor of -36° F (below zero). A thermal imaging camera was then used to measure the heat loss of the ice shelter made with NorpacR2™ vs. comparable sized shelters with traditional single ply fabrics. By Using the same 9000 BTU heater in both houses, after 5 minutes, the NorpacR2™ shelter reached 48°F inside shelter temperature while the single ply shelters exhibited 9°F ± 1°F (a 39 degree heat loss difference!). Furthermore, the thermal imaging camera detected a 34° to 36° temperature difference on the exterior surfaces of the insulated and non-insulated shelters – significant heat retention compared to traditional fabrics.

Norpac LLC in Rogers, MN, announces a new brand of extreme weather fabric, NorpacR2™, to be released for the 2007/08 ice fishing season. NorpacR2™ was developed by Canvas Craft Inc, a Minnesota manufacturer of outdoor fabric products since 1977 [www.canvascraftinc.com](http://www.canvascraftinc.com). Norpac is a 3M authorized converter of Thinsulate FR for the outdoor shelter industry. Working closely with 3M using their flame resistant Thinsulate™ Insulation FR, Norpac has developed a warm, comfortable shelter fabric specifically created to handle extreme cold weather conditions. NorpacR2™ combines 3M's Thinsulate Insulation FR with a Norpac's high performance inner lining and an outer shell to create an extreme weather fabric with an "R" value of 1.4 that offers excellent thermal retention.

NorpacR2™ extreme weather fabric features warmth of Thinsulate Insulation FR, quilted between two layers of durable flame resistant fabric that remains pliable in almost any weather condition. The flame-resistant rugged outer shell is available in black, with a light grey inner lining that provides a brighter interior. You'll find it being used on well known ice fishing shelters like Canvas Craft's Otterskin & Northlander, Frabill's new R2-Tec series, and the Wilcraft to name a few."

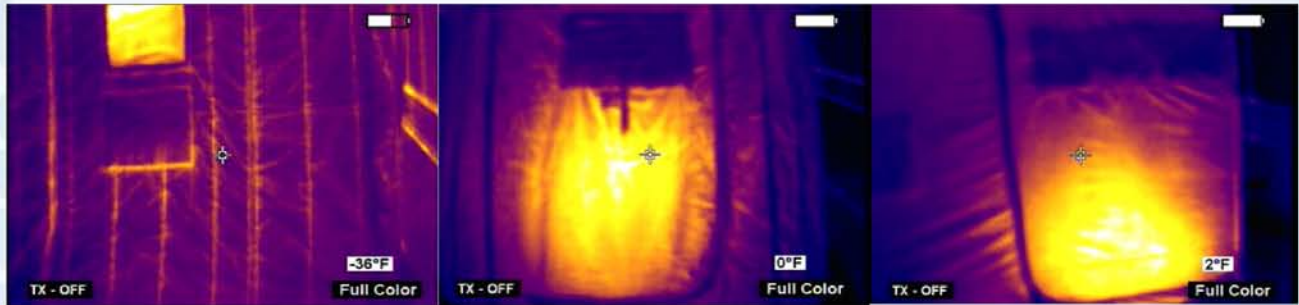
# Comparison Study – a difference you can see and feel:

Conditions: Outside Air temp: -10°F / 15 mph wind / 9,000 BTU propane heater



Traditional Heavy Canvas

Traditional Poly/denier Fabric



## Results:

**Exterior Surface Temp**      **-36°F**

**0°F**

**+2°F**

*(Measurement of heat loss:  
higher surface temp = more heat loss)*

**Interior Temp**                **+48°F**

**+10°F**

**+9°F**

*(Measurement of heat  
retention within shelter)*

## Benefits include:

- Easy to heat – minimizes the heat source needed to keep warm and reduce the amount of heaters and gas needed
- More comfortable and warmer allowing the angler to stay on the ice longer.
- No condensation build up – eliminates dripping inside the house
- Oxygen – heaters burn oxygen and create moisture due to vapor build-up
- Brighter interior illuminates your fishing area for a more comfortable and enjoyable angling experience.
- Quiet – NorpacR2™ does not “wind whip” and is extremely quiet in intense winds.
- Light Weight – NorpacR2™ adds a mere 3-5 lbs per average shelter – not likely noticeable when pulled across the ice.
- Safety – The flame-resistant fabrics in Norpac R2 meet all CPAI-84 specifications for flame-resistant materials used in camping tentage.

**For more information about NorpacR2™ fabric, 763-428-2420, [www.norpacR2.com](http://www.norpacR2.com)**

*Norpac LLC is a 3M authorized converter of Thinsulate FR for the outdoor shelter industry.*

Thinsulate is a trademark of 3M. NorpacR2 is a trademark of Norpac LLC.