

Staying Warm

Protecting Workers in Cold Environments



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ANSI 201 – American National Standard for Insulating Apparel used in Cold Work Environments

Intended to:

- Provide an objective, scientific basis for measuring apparel insulating properties (Clo value)
 - Provide user and specifier guidance on apparel selection based on exposure and working conditions
 - Provide a garment durability component (retention of properties with wash)
- **Status: Currently out for review in public canvass**



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How some purchase decisions are made today?



For warmth:

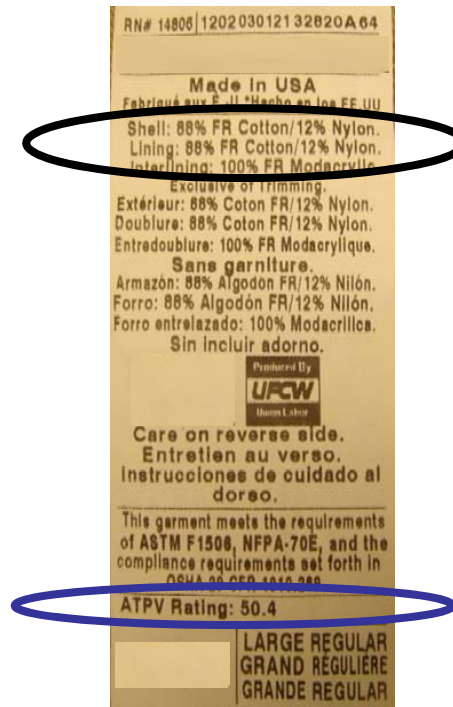
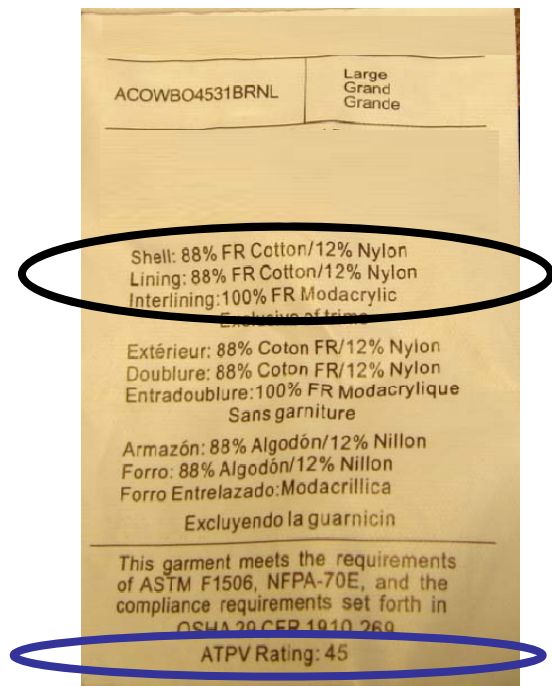
- Look for insulated styles
- And/or utilize layering
- Garment Brand
- Price



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How some purchase decisions are made today?



- Labels show construction and ATPV
- No way to know how warm the garment is
- Or how wash-durable it will be
- Because there's no standard in place



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How could a Utility Company use ANSI 201 to make a better purchase decision?

Follow the process:

1. Determine User Application
2. Estimate Required Ensemble Intrinsic Insulation Value
3. Select and Procure Garment
4. Confirm Purchase Decision



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1. Determine User Application

- Activities:
 - What level of effort will be exerted by the end-user?
 - Are there mobility or freedom-of-movement requirements?
- Conditions:
 - What are the exposure temperatures, wind speeds, precipitation potential?
- Duration:
 - How long will the worker be exposed to the above Conditions and/or be operating at the above effort level?



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2. Estimate Required Ensemble Intrinsic Insulation Value

- ASTM F2732-09
 - Standard Practice for Determining the Temperature Ratings for Cold Weather Protective Clothing.
- ISO 11079
 - Evaluation of cold environments – Determination of required clothing insulation (IREQ)
- EN 342
 - Protective clothing Ensembles and Garments for protection against cold.



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3. Select and Procure Garment

- Whether you buy a garment off the shelf or specify the construction, it should meet:
 - The required Ensemble Intrinsic Insulation Value based on User Application, and
 - Expected Lifetime / Laundry / Work Duty Cycle



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How could the use of ANSI 201-200X help make better purchase decisions?



Garment #1



Garment #2



Garment #3



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Apples to Apples Comparison: Sample Labels

ANSI/ISEA 201-20XX
Thermal Performance Category 4 Insulation range 2.50 - 2.99 clo Temperature Rating 20° F (As defined for light work activity, 2 MET, by ASTM 2732-09)
Home Wash Durability Class 2 max 10 x, ISO 6330:2000 Procedure 4A
Industrial Wash Durability Class 1 max 5 x, ISO 15797:2002 75° C
Available space for manufacturer care instructions, apparel composition, etc.

Garment #1

ANSI/ISEA 201-20XX
Thermal Performance Category 3 Insulation range 2.00 - 2.49 clo Temperature Rating 42° F (As defined for light work activity, 2 MET, by ASTM 2732-09)
Home Wash Durability Class 3 max 25 x, ISO 6330:2000 Procedure 4A
Industrial Wash Durability Class 1 max 5 x, ISO 15797:2002 75° C
Available space for manufacturer care instructions, apparel composition, etc.

Garment #2

ANSI/ISEA 201-20XX
Thermal Performance Category 4 Insulation range 2.50 - 2.99 clo Temperature Rating 20° F (As defined for light work activity, 2 MET, by ASTM 2732-09)
Home Wash Durability Class 3 max 25 x, ISO 6330:2000 Procedure 4A
Industrial Wash Durability Class 1 max 5 x, ISO 15797:2002 75° C
Available space for manufacturer care instructions, apparel composition, etc.

Garment #3

4. Confirm Purchase Decision

Through...

- Field Use
- Wearer feedback

Did the garment you purchased meet your needs?



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ANSI 201-20XX Purpose

“The purpose of this standard is to be a tool to assist garment selectors or specifiers in determining appropriate apparel items for cold ambient environments based on temperature and the activity of the wearer, as well as to assist garment manufacturers in selecting materials and performance of said apparel items.”



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Questions



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