

## TECHNICAL SHEET

# GRADO – padded bib

#### Description

- · adjustable elaticated braces,
- badge holder ring under the flap,
- central opening closed with zip and snap, internal and external double flap,
- double front pocket at the waistline with velcro closed flap,
- pockets for safeknees padded with
   Thinsulate™: this area has been reinforced
   because when on knees the wearer can exert pressure on this area, thus causing thermal dispersion,
- side opening along the whole leg closed by zip and snap, with double external and internal flap



#### Maintenance

Maximum wash temperature: 30°C; Do not bleach; Do not dry clean; Do not dry in a tumble dryer; Do not iron.













Item

V167-0-02 Navy

#### EN ISO 13688:2013

Standards





Sizes

S-4XL

## SAFETY TECHNICAL SPECIFICATIONS

	Test method	Description	Cofra result	Minimum requirement / range		
Background fabric	EN ISO 1833-1977, SECTIONE 10	Composition	100% Nylon Oxford 420 D			
	EN ISO 12127:1996	Weight per unit area	145 g/m²			
	EN ISO 13688 :2013 4.2 (EN 14362-1)	Search of the aromatic and carcinogenic amines	Not recording	≤30 ppm		
	EN ISO 13688:2013 4.2 (EN ISO 3071)	The pH's determination from the watery extract	pH = 5.9	3,5 ≤pH≤ 9,5		
	EN ISO 13688:2013 5.3 (ISO 5077)	Dimensional change to washing after 5 washes (30°C)	warp: -1.4% weft: -1.4%	±3%		

Made by Workwear Technical Dept.

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	EN 342:2017	Tear strength	warp: 129 N		>20 N		
	4.6.1 (EN ISO 4674-1)		weft: 114 N				
	(2.1.100 107 1.1)						
	ISO 105 E04	Colour fastness to perspiration	Acidic	Alkaline	1-5		
		Colour change	4-5	4-5			
		Staining:					
		diacetate	4-5	4-5			
		cotton	4-5	4-5			
		nylon	4-5	4-5			
		polyester	4-5	4-5			
		acrylic	4-5	4-5			
		wool	4-5	4-5			
	ISO 105-C06	Colour fastness to laundering at 40°C					
		Colour change	4-5		1-5		
		Staining:			-		
		diacetate	4-5				
		cotton	4-5				
		nylon	4-5				
		polyester	4-5				
		acrylic	4-5				
		wool	4-5				
	ISO 105-X12	Colour fastness to rubbing	Dry: 4-5		1-5		
	ISO 105-B02	Colour fastness to light					
		Colour change:		1-5			
	EN ISO 13934-1	Tensile strength	warp: 1600 N				
			weft: 900 N				
Lining	EN ISO 1833-1977, SECTIONE	Composition	100% Polyeste	er			
	10						
	EN ISO 12127:1996	Weight per unit area					
		3 - 1	55 g/m²				
Padding	EN ISO 1833-1977,SECTIONE 10	Composition	er (Thinsulate®)				
	EN ICO 12127-1006	Weight per unit area					
	EN ISO 12127:1996						
			150 g/m²				
Reflex retro reflective fabric	EN ISO 20471:2013/A1:2016 6.1	Retro reflective performance requirements of new material					
D6110							
	1						

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EN ISO 20471:2013/A1:2016

6.2

Requirements of retro reflective performance after tests for abrasion, flexion, folding at cold temperature, temperature variations, washing (50 cycles ISO 6330 at 60°C) and rain influence.

 $R' \ge 100 \text{ cd/(lx } m^2)$ 

Leida+Grado

EN 342:2017

63

(EN ISO 15831)

Measurement of thermal insulation by means of a thermal manikin

after 5 washes a 30°C

I<sub>cler</sub> 0.412 [m<sup>2</sup>K/W]

Table B: resultant effective thermal insulation of ciothing l <sub>der</sub> and ambient temperature conditions for heat balance at different activity levels and duration of exposure													
thermic insulation I <sub>der</sub>	moving activity												
	- 75 W/m² air speed 0,4 m/s		75 W/m² air speed 3 m/s		lic	light		light		medium		medium	
					115 W/m² air speed 0,4 m/s		115 W/m² air speed 3 m/s		170 W/m² air speed 0,4 m/s		170 W/m² air speed 3 m/s		
													8h
	0,265	13	0	19	7	3	-12	9	-3	-12	-28	-2	-16
0,310	10	-4	17	3	-2	-18	6	-8	-18	-36	-7	-22	
0.390	5	-12	13	-3	-9	-28	0	-16	-29	-49	-16	-33	
0.412	3,6	-14,2	11,4	-4,7	-11,2	-30,8	-1,7	-18,2	-32,0	-52,0	-18,2	-35,8	
0.470	0	-20	7	-0	-17	-38	-6	-24	-40	-60	-24	-43	

-41

-45

-55

-20

-24

EN 342:2017

0,500

0.540

0.620

6.4

(EN ISO 9237)

Determination of the permeability of fabrics to air

-11.1

-14

-20

-22,6

-26

0

-10

after 5 washes a 30°C

-8,1

-11

AP <1mm/s CLASS 3 AP (mm/s) CLASS

-43.8

-49

-60

-26,6

-30

-38

-64.7

-71

-84

AP>100 1 5<AP<100 2

-27,4

-40

-46.8

-52

-61

AP<5 3