

TECHNICAL DATA SHEET

Name

MARINE

Code

98090 O2 FO HRO SR

Product Range



Standard

O2 FO HRO SR

EN ISO

20347:2022

Weight

700 grams
(1 shoe in size 42)

Size range

35 <-> 50

Mondopoint

11

Packaging

6 pairs/carton
(same size)

TECHNICAL SPECIFICATIONS



SOLE

SOLE FEATURES



The HEATSHIELD® sole, with its tread made from nitrile rubber, offers superior slip resistance and can withstand temperatures up to 300°C. It outperforms other sole types in durability and chemical resistance, while its polyurethane foam midsole ensures all-day comfort.



PROTECTIVE ELEMENTS

UPPER

LINING

FOOTBED



Natural leather with water-repellent, stain, abrasion, UV-resistant properties, and exceptional tensile strength.



Three-layer wear-resistant lining featuring a microchannel network for unparalleled breathability and antimicrobial properties to prevent odors and microorganism growth.



Removable insole made from antistatic polyurethane, featuring a polyurethane gel heel insert for shock absorption, and treated with antimicrobial and antibacterial agents.

EXTRA



SAFETY TECHNICAL SPECIFICATIONS

Description	Measurement Unit	Requirement	Test Result
TOE CAP: Impact resistance	mm	≥ 14	-
TOE CAP: Compression resistance	mm	≥ 14	-
ANTI-PUNCTURE PLATE: Penetration resistance	N	≥ 1.100	-
FOOTWEAR: Antistatic properties (in wet condition)	MΩ	≥ 0,1	15,1
FOOTWEAR: Antistatic properties (in dry condition)	MΩ	≤ 1.000	150
UPPER: Water vapour permeability	mg/cm2*h	≥ 0,8	1,3
UPPER: Water vapour coefficient	mg/cm2	≥ 15	20
UPPER: Water penetration after 60 min	g	≤ 0,2	0
UPPER: Water absorption after 60 min	%	≤ 30	1,6
INTERNAL LINING: Water vapour permeability	mg/(cm2*h)	≥ 2,0	85,5
INTERNAL LINING: Water vapour coefficient	mg/cm2	≥ 20	725,9
OUTSOLE: Abrasion resistance	mm3	≤ 150	33
OUTSOLE: Energy absorption of seat region (E)	J	≥ 20	36
OUTSOLE: Flexural resistance	mm	≤ 4	0
OUTSOLE: Interlayer bond strength	N/mm	≥ 4	6,5
OUTSOLE: Resistance to fuel oil (FO)	%	≤ 12	1,5

ADDITIONAL FEATURES

Test	Measurement Unit	Requirement	Results
Electrical resistance for ESD footwear <small>Requirements IEC 61340-5-1:2016</small>	mA	≤ 1,00	-
Resistance to hot contact (HRO)	-	outsoles shall not melt and develop any cracks when bent	-
Cold insulation of outsole complex (CI) 30min/-17°C <small>(temperature decrease on the upper surface of the insock)</small>	°C	≤ 10	-
Heat insulation of outsole complex (HI) 30min/150°C	°C	≤ 22	-
Water resistance (WR) <small>(Total wetted area inside the footwear)</small>	cm2	after 80 min.	-
Electric hazard resistance (EH) 18kV / 60 Hz <small>(Electric flux)</small>	MΩ	≤ 100	-

STORAGE, CARE AND MAINTENANCE

- PANDA SAFETY footwear should be stored in original packaging, storage temperature should not exceed 35°C, humidity should be less than 80% and without the influence of direct sunlight.
- Sandals, shoes and boots should be cleaned after each use; dry off the shoes, not in proximity to or in direct contact with stoves or other sources of heat.
- Carry out the periodic treatment of the uppers with suitable products containing wax, grease, silicone, etc.
- Avoid contact with aggressive chemicals and extreme temperatures.
- Verify the good state before each use.

SOLE DESIGN AND PERFORMANCE



ENERGY ABSORPTION COEFFICIENT IN THE HEEL AREA

0	MINIMUM VALUE REQUIRED	20	TEST RESULT	39	95%
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INDUSTRIES

