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## Technical Data Sheet

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### Product Description

Coats Signal C412 300 is an aramid based fluorescent lime-silver-lime reflective tape for industrial wash heat and flame protective clothing especially firefighter uniforms. Combined with retro reflective and fluorescent elements, it helps to maximise the visibility in nighttime, during daytime or low light conditions.

### Product Construction

Coats Signal C412 300 is made of fluorescent lime part and high performance glass beads based silver part laminated on a durable 100% m-aramid fabric backing. The silver part is in the middle of fluorescent lime part.

### Areas of Applications

Coats Signal C412 300 is a sewn-on reflective tape for high visibility industrial wash heat and flame protective clothing especially firefighter uniforms where EN 469, EN ISO 11612 and EN ISO 14116 certifications are required. All high visibility flame resistant garments should be made according to proper standards.

### Product Certification

#### Colour and Reflective Performance – EN 20471

Coats Signal C412 300 is approved according to EN 20471 high visibility norm. The fluorescent lime part meets the chromaticity and min. luminance factor requirements. The silver part delivers maximum retro reflective performance. The typical reflective performance (RA in cd/lux/m<sup>2</sup>) according to EN ISO 20471, table 4 is shown below.

Observation angle	Entrance angle	Coats Signal C412 300	Minimum norm requirement
12'	5°	500 (silver part)	330

### Article Number / Make-up

Art. No.: C412 300 - roll of 100 m / available in 50.8mm (±0.8) and 75.8mm (±0.8) widths

## Care Instructions

### Domestic Wash



### Industrial wash

- Maximum wash temperature: 75°C
- Tumble dry: 90°C
- Tunnel dry: 160°C
- Use low alkaline surfactant detergent, do not use sodium hydroxide or potassium hydroxide containing detergents, lower pH near to neutral is recommended
- Do not use solvenated surfactants
- Do not use perborate based bleaching
- Soak soap for less than 15 min.

## Physical Performance

Coats Signal C412 300 silver part meets or exceeds in origin the performance as per EN ISO 20471, clause 6.1 as well as the requirements in clause 6.2 after exposure to abrasion, flexing, folding at cold temperature, temperature variation, washing, dry cleaning and influence of rainfall. The following table shows the detail specifications.

Tests	Details
Retro reflective performance in origin	EN ISO 20471:2013, pt. 6.1, table 4 and 5 Test method: CIE 54.2
Retro reflective performance after pre-treatment	EN ISO 20471:2013, pt. 6.2.1, table 6 Test method: CIE 54.2
Colour new, after xenon test and ageing	EN ISO 20471:2013, pt. 5.1, 5.2, 7.5 (EN ISO 6330:2012, method 6N+F) Test method: CIE 15:2004
Abrasion	EN ISO 12947-2:2007, 9 kPa, wool, 5000 cycles
Flexing	ISO 7854:1995 method A, 7500 cycles
Folding at cold temperature	ISO 4675, (-20 ±2)°C
Temperature variation	EN ISO 20471:2013, pt. 7.4.4, 12 hours @ (+50±2)°C & 20 hours @ (-30±2)°C
Domestic wash 60°C	EN ISO 6330:2012, method 6N+F, 60 cycles
Domestic wash 90°C	EN ISO 6330:2012, method 9N+F, 40 cycles

Industrial wash 75°C with tumble dry at 90°C and tunnel dry at 160°C	EN ISO 15797:2004, method 8 with tumble dry (90°C) and tunnel dry (160°C), 25 cycles
Dry cleaning	EN ISO 3175-2:2010, perchloroethylene, 50 cycles
Influence of rain	EN 20471:2013, annex C

## Heat Resistance and Limited Flame Spread Performance

Coats Signal C412 300 meets the heat resistance and limited flame spread requirements according to EN 469, EN ISO 11612 and EN ISO 14116. The following table shows the detail specifications.

Tests	Details
EN 469, annex B 3.1 Heat resistance	ISO 17493, 5 min. (180 ± 5) °C
EN 469, annex B 3.2 Limited flame spread	ISO 15025, method A

## Storage

Coats Signal reflective tapes should be stored in a cool and dry place with low humidity. The used rolls should be returned back to original packaging or suspended from the middle.

## General Safety Information

Since conditions and applications vary considerably in the use of a product, the customer and/or user should assure herself or himself that the product meets end customer requirements and is suitable for the intended end use. Coats accepts no liability for unsuitable or improper use or application of products.

Information provided above is based on current averages and should be taken only as indicative. Coats accepts no liability for the preciseness and correctness of the information provided.

Product information sheets are updated from time to time, please be sure you are referring to the most recent publication. Coats supports customers with advise on individual applications on request; if you have any questions or concerns, please contact us. Coats Signal cannot guarantee an absolute visibility especially in severe weather conditions.

## Further Assistance

Please contact your local Coats representative for further assistance.