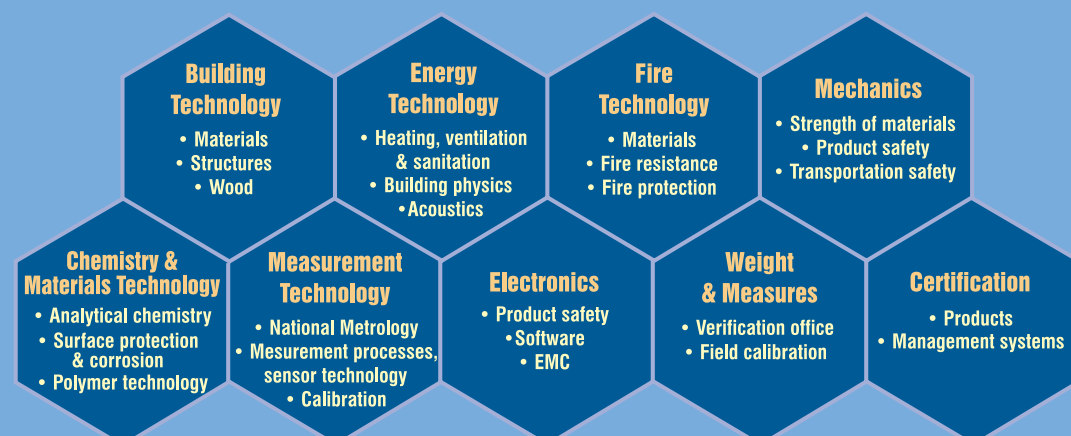




Foto Ingrid Wetterlund

SP Swedish National Testing and Research Institute develops and transfers technology for improving competitiveness and quality in industry, and for safety, conservation of resources and environment in society as a whole. With Swedens widest and most sophisticated range of equipment and expertise for technical investigation, measurement, testing and certification, we perform research and development in close liaison with universities, institutes of technology and international partners.

SP is an EU-notified body and accredited test laboratory. Our headquarters are in Borås, in the west part of Sweden.



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# SP – a guiding resource for the marine industry

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# Testing, research and certification

SP Swedish National Testing and Research Institute is an impartial and versatile organisation with competence covering various fields of technology. That make us well prepared to support industries with research and development, testing and certification. We have a worldwide recognition regarding maritime safety and take active part in the IMO work where we represent Sweden as technical expert. Our test reports and certificates are recognized by most of the classification societies. This brochure will give you a few examples of SP's capability to support the marine industry.

## Environmental durability

Climatic and mechanical testing required in different marine equipment related standards.

## Volume measurement

Tankage, level, flow and temperature measurement instrument and geometrical measurements.

## Fire fighting equipment

Fire testing of fire fighting systems, foam, hose reels and portable fire extinguishers.

## Reaction to fire

Fire testing of linings, floorings, cables, furnishings and other products used on board.

## Fire resistance

Fire testing and assessment of class "A", "B" and "F" divisions and divisions for High Speed Craft.

## Containers and transport packagings

Testing and certification of containers and transport packagings. Packagings for dangerous goods.

## Load securing and lashing

Durability, strength and function of equipment for load securing and lashing.

## Anchor chain

Strength, fracture mechanics and fatigue.

## SP performs certification of

- Products
- Quality systems according to the ISO 9000-series
- Environmental Management systems according to ISO 14001 and EMAS

SP's wide range of certification services enable us to provide money and time-saving combinations of inspection of certified products and quality systems.

## Electromagnetic compatibility

EMC testing of navigation, control and other electronic equipment. Radio testing of radio and communications equipment.

## Electrical safety

Electrical safety measurements required in different marine equipment related standards.

## Lights, beacons

Light distribution and colour measurements, visual distance, durability of light sources.

## Electrical wires and harness

Mechanical characteristics, chemical resistance, ageing resistance, ozone resistance.

## Noise and vibration

Qualified consultancy services including laboratory and field measurements of vibration, sound insulation, sound power levels and sound pressure levels.

## Plastics and Rubber materials

Durability and Function: wire harnesses, hoses, cordage, interior materials, floorings, fire hose reels.

## Surface protection and corrosion

Coatings: e. g. weathering and corrosion resistance. Quality of surface preparation, failure analysis.

## Chemical analyses

Oils, fuels, materials, environment.



## SP is a Notified Body under the Marine Equipment Directive



SP is a Notified Body under the Marine Equipment Directive and can assist manufacturers to get access to the European market (Member states in the European Union, Iceland and Norway).

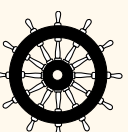
SP is notified (listed with the identification number 0402 by the Commission) to provide all services for conformity assessment on the conditions set out in the Directive 96/98/EC.

The Directive covers equipment required for:

- Life saving
- Marine pollution prevention
- Fire protection
- Navigation
- Radio Communications

Manufacturers operating a certified quality system based on ISO 9000 and an approved production quality system in accordance with modules D or E of the Directive are offered co-ordination of the continued surveillance.

The EU mark of conformity "Wheel mark" indicates that the product conforms to all the provisions of the Directive.



## Explosion protection

Certification of Ex-equipment for hazardous areas with explosive atmosphere. E.g. equipment for level- and temperature measuring systems, actuators, fire- and smoke alarm systems.

## Safety-related software

Safety-related functions are often controlled by programmable electronic systems. Evaluation of software in embedded systems is performed both by analysis and tests.

## Life Saving Appliances

Lifebuoys, pyrotechnics, position indicating lights, retro-reflective materials, buoyant materials, thermal protective aids.