PIPE MARKING
OFFSHORE & MARINE

T-ISS
Safety Suppliers

INTRODUCTION

Marking pipes is essential to ensure safety at all times. Accidents, injuries and damage to machines and equipment can be caused by the fact your operators or external maintenance engineers and intervention services are unaware of the risks of the substances that flow through pipes. The importance of marking pipes becomes clear when we look at the different standards & regulations. In the EU it's required by the regulation EU 92/58.

Standards & regulations

Several regional or maritime organisations require compliance with pipe marking standards. Whether it is ISO 14726, ISO 20560, DIN 2403, ANSI, ASME A13.1, BSI 1710, NORSOK or other company standards, T-ISS can supply the correct and compliant pipemarkers in any colour with any print that meet these standards.

Because of this variety in global or regional standards, the new published ISO 20560 standard will realize a truly global, harmonized system of hazard recognition for pipe marking systems with uniformity of graphics, colour-coding and formatting of safety messages. T-ISS can supply you with pipe markers meet the requirements of this new ISO 20560 standard.

Pipe marking requirements

The colour, the colour pattern, the size, the width, the content description, the letter size, the flow direction and the safety symbols differ from one standard to another. Our markers, regardless of the sector in which they are to be used, always comply with the latest applicable standards and requirements regarding legislation and regulations.

Where to apply pipe markings?
- At least one in every room for every pipe and every medium
- At frequent intervals on straight pipe runs, between 3 and 5 meter.
  In clear situations a greater distance is possible
- When pipes pass through the floor, ceiling or wall, mark both sides
- When pipes change direction
- In the proximity of each valve and pump

For particular surfaces or if the pipes have a too large diameter, it is also possible to provide individual pipe markers. This marker contains all the necessary information in accordance with legislation and regulations, such as colour coding, medium name, safety symbols and possibly the direction of flow. These also differ per standard.

Layout & Design

Within our production process we can make all sorts of different layouts of pipe marking. These layouts always include the mandatory (in most national norms & regulations) safety information:
- Flow direction
- GHS/CLP symbols and warning signs
- Pipe contents description

It has recently also become common to include process information, secondary language and more detailed information about the hazard symbols and even QR codes.

Pipe Marking according ISO 20560-1

Customized Pipe Marking

Our fully customizable pipemarkers can include all the pipe, contents and flow information your location (both maritime, offshore or industry & chemical sectors) needs to optimally increase workplace safety and efficiency. We will produce all pipe markers using the colours according to the latest global or local regulations and your specific demands.
We can supply customized pipe markers with an Self-Adhesive layer, Non-Adhesive or PreCoiled.

Customized Pipe Marking

QUALITY PIPE MARKERS

Economy Line

This pipe marking tape is an economic, unlaminated, acrylic self-adhesive vinyl. The recommended use for this pipemarker is indoors or short term. The Economy Line quality pipe marking is both available as complete printed marker as well as single colour rolls and arrow tape to combine yourself for use on ships according to ISO 14726.

Basic Line

The Basic Line pipe marking is a standard performance, acrylic self-adhesive vinyl, glossy laminated for UV and dirt resistance. This tape can be used both indoor and outdoor in various types of environment. UV-resistant up to 5 years*, fixation suitable for smoot and clean surfaces.

Polyespro® self-adhesive

The special developed Polyespro® pipe marking is the highest available quality. With the resin-based glue it is suitable for all types of pipes, also at older painted surfaces and stainless steel. The non-PVC polyester film and protective laminate guarantees a more than 10 year* expected lifetime both for UV-resistance and fixation, heat and cold resistance and dirt resistance. The resin-based adhesive protects against the risk of moisture between the pipe marker and the pipe and is safe to use at stainless steel pipes.

- Rolls
- Sheets
- UV-, scratch- and chemical resistant
- Seawater resistant
- Temperature resistance -40 °C up to +130°C
- Usable in extreme weather conditions
- Strong adhesive, also for use at stainless steel
- The highest available pipemarker on the market today

Laminate
Polyester
Special adhesive
Backing
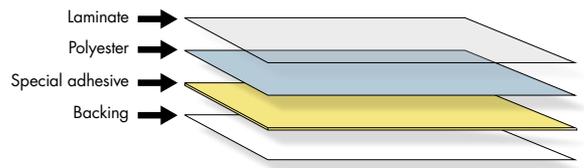
Polyespro® Precoiled / non adhesive

The easy to install and removable PreCoiled Polyespro® pipe marking film is a high performance non-PVC polyester sandwich which can be used in demanding environments with a long expected, more than 10-years, lifetime. The PreCoiled pipe markers allow for very quick installation in industry, off-shore installations and ships.

- All above mentioned specifications
- Reusable
- For application on dirty, oily, greasy or rough surfaces
- Easy to install
- Including self-adhesive fixation strip

Remove backing

Fixation
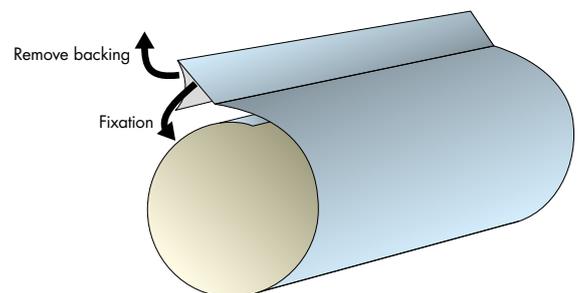
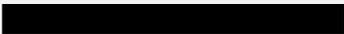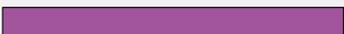* Depending on the geographical area and vertical or non-vertical exposure

ISO 20560-1; THE NEW WORLDWIDE STANDARD FOR PIPE MARKING

The ISO 20560-1 combines technical information about the contents and identification of pipes with safety information, aiming to have one global safety language for all workers at installations, both on land and maritime.

Key facts ISO 20560-1

- Display content name and flowdirection
- Yellow safety colour for recognition the pipe-content is hazardous
- Warning symbols for hazards according to Safety Data Sheet and other process related risks
- Other safety related information, such as pressure, temperature, speed, etc.
- Technical process information, such as pipe numbers, from-to information, classification code, etc.

Basic identification colours according to ISO 20560-1

	CONTENT OF A PIPE	COLOUR	
Safety colour	Hazardous substances	Yellow	
Basic identification colour	Gases in either gaseous or liquefied condition	Grey	
	Liquids and fixed materials (powder, granulates	Black	
	Acids	Orange	
	Alkalis (leaches)	Violet	
	Firefighting medium	Red	
	Water	Green	
	Air	Blue	
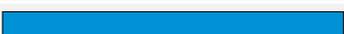
Examples according to ISO 20560-1

Alkali with hazards

Water, no hazards

Gas, no hazards

Firefighting gas (steam) with supplementary identification colours

Gas with hazards and technical information

Liquid with hazards, also process and technical information

Pipe markers according to ISO 20560-1, quality Polyespro, can be supplied as rolls, length 6 or 12 meter, or as a sheet for a single wrapper. The width of the marker depends on the amount of safety symbols and the diameter of the pipe. See tables below and next page.

Width of ISO 20560-1 Pipe marking
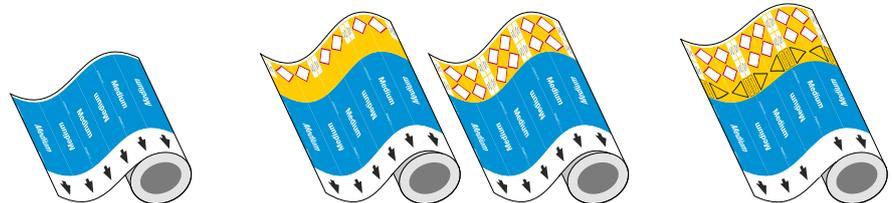
PIPEDIAMETER	0 SYMBOLS	1 / 2 SYMBOLS	3 SYMBOLS
≤ 150mm	119mm	162mm	183mm
150 - 500mm	179mm	243mm	275mm
> 500mm	238mm	342mm	366mm
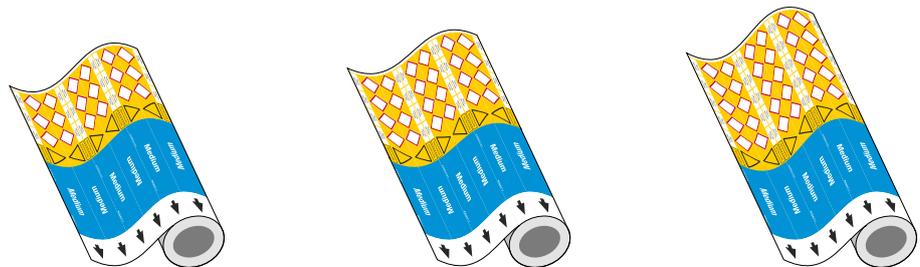
PIPEDIAMETER	4 SYMBOLS	5 SYMBOLS	6 SYMBOLS
≤ 150mm	204mm	225mm	246mm
150 - 500mm	306mm	338mm	369mm
> 500mm	408mm	450mm	490mm
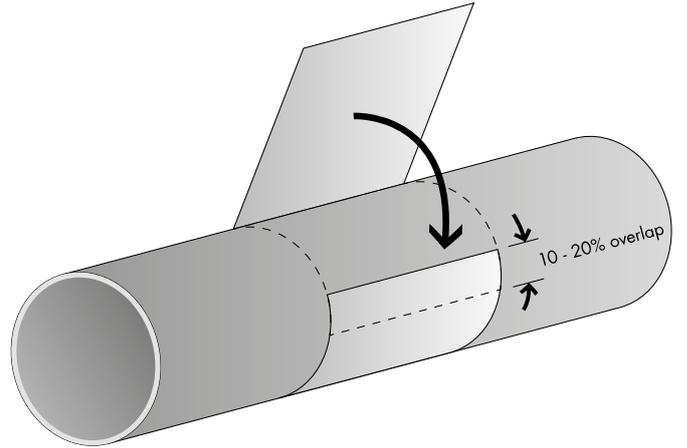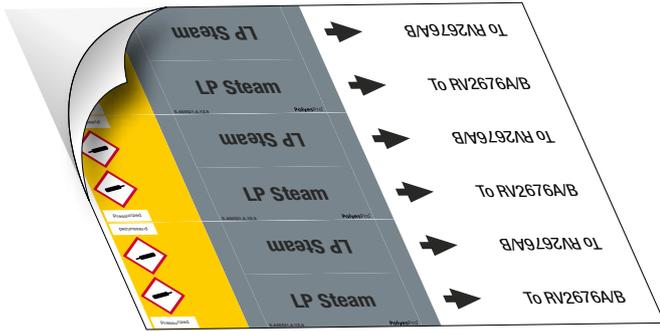
Length of sheet = outline pipe + 10 - 20%

Width of ISO 20560-1 Pipe marking with additional information

PIPEDIAMETER	0 SYMBOLS	1-2 SYMBOLS	3 SYMBOLS	4 SYMBOLS	5 SYMBOLS	6 SYMBOLS
≤ 150mm	189mm	232mm	253mm	274mm	295mm	316mm
150 - 500mm	284mm	348mm	380mm	411mm	443mm	474mm
> 500mm	378mm	464mm	506mm	548mm	590mm	630mm

Size of individual ISO 20560-1 Pipe markers

PIPEDIAMETER	0 SYMBOLS	1-2 SYMBOLS	3 SYMBOLS	4 SYMBOLS	5 SYMBOLS	6 SYMBOLS
≤ 150mm	146x34mm	189x34mm	210x34mm	231x34mm	252x34mm	273x34mm
150 - 500mm	219x48mm	284x48mm	315x48mm	347x48mm	378x48mm	410x48mm
> 500mm	292x62mm	378x62mm	420x62mm	462x62mm	504x62mm	546x62mm

ISO 14726;

standard from 2008, only for identification colours of marine and ships piping systems

The ISO 14726 has main colours for groups of media and advises for additional colours displayed in the center of the pipe marker. Arrows for direction of flow and text for the content name is recommended.
In the ISO 14726 is safety information not adopted.

T-ISS advices the use of the recent developed ISO 20560-1 because of one safe language for safety and technical information.
T-ISS offers pipemarkers for both of the ISO standards, as well as DIN 2403, Norsok, BS 1710, ANSI/ASME A13.1, and company standards on request.

Main colours according to ISO 14726

COLOR	DESCRIPTION
	Waste media
	Fresh water
	Fuel
	Sea water
	Non-flammable gases
	Masses (dry and wet)
	Oil other than fuel
	Steam
	Fire fighting
	Air in vent. systems
	Flammable gases
	Acids and alkalis
	Flow direction

WASTE MEDIA

BLACK WATER	Black water
WASTE OIL	Waste oil
BILGE WATER	Bilge Water
EXHAUST GAS	Exhaust gas
GREY WATER	Grey water
SEWAGE CONTAMINATED	Sewage contaminated

FUEL

HEAVY FUEL OIL	Heavy fuel oil (HFO)
AVIATION FUEL	Aviation fuel
BIOLOGICAL FUEL	Biological fuel
GAS TURBINE FUEL	Gas-turbine fuel
MARINE DIESEL OIL	Marine diesel oil (MDO)

NON-FLAMMABLE GASSES

OXYGEN	Oxygen
INERT GAS	Inert gas
NITROGEN	Nitrogen
REFRIGERANT	Refrigerant
COMPRESSED AIR LP	Compressed air (LP) Low Pressure
COMPRESSED AIR HP	Compressed air (HP) High Pressure
CONTROL AIR REGULATING AIR	Control air / regulating air
BREATHING AIR	Breathing air (used in submarines)
BREATHING GAS	Breathing gas (used in submarines)

FRESH WATER

FRESH WATER SANITAIRY	Fresh water, sanitairy
POTABLE WATER	Potable water
DISTILLATE	Distillate
GAS TURBINE WASH WATER	Gas-turbine wash water
FEED WATER	Feed water
COOLING FRESH WATER	Cooling fresh water
CHILLED WATER	Chilled water
CONDENSATE	Condensate

SEA WATER

DECONTAMINATION WATER	Decontamination water
SEA WATER SANITAIRY	Sea water, sanitairy
BALLAST WATER	Ballast water
COOLING SEA WATER	Cooling sea water

OILS OTHER THAN FUEL

THERMAL FLUID	Thermal fluid
LUBRICATION OIL FOR GAS TURBINES	Lubrication oil for gas turbines
HYDRAULIC FLUID	Hydraulic fluid
LUBRICATION OIL STEAM TURBINES	Lubrication oil for steam turbines
LUBRICATION OIL FOR GEARS	Lubrication oil for gears
LUBRICATION OIL FOR INTERNAL COMBUSTION ENGINES	Lubr. oil for internal combustion engines

FLAMMABLE GASES

HYDROGEN	Hydrogen
ACETYLENE	Acetylene
LIQUID GAS	Liquid gas

FIRE-FIGHTING/FIRE PROTECTION

FIRE FIGHTING WATER	Fire-fighting water
FIRE FIGHTING GAS	Fire-fighting gas
SPRINKLER WATER	Sprinkler water
SPRAY WATER	Spray water
FIRE FIGHTING POWDER	Fire-fighting powder
FIRE FIGHTING FOAM	Fire-fighting foam

VENTILATION AIR

DISCHARGE AIR	Discharge air
MECHANICAL SUPPLY AIR-COLD	Mechanical supply air, cold
NATURAL EXHAUST AIR	Natural exhaust air
ATMOSPHERIC AIR	Atmospheric air
MECHANICAL EXHAUST AIR	Mechanical exhaust air
DECONTAMINATED SUPPLY AIR	Decontaminated supply air
MECHANICAL RECIRCULATED AIR	Mechanical recirculated air
MECHANICAL SUPPLY AIR-WARM	Mechanical supply air warm
SMOKE CLEARANCE	Smoke clearance
CONDITIONED SUPPLY AIR	Conditioned supply air
NATURAL SUPPLY AIR	Natural supply air

STEAM

STEAM FOR HEATING	Steam for heating purposes
DRIVING STEAM	Driving steam
EXHAUST STEAM	Exhaust system
SUPPLY STEAM	Supply steam

CUSTOM MADE PIPE MARKING

Each pipemarker is dedicated to a particular pipe diameter, see illustration page 6.

Pay attention to insulated pipes for the larger outline.

For the textheight, take care all information is readable from the viewing sides of the pipe.

Please ask our specialists for advice in case of ambiguities.

All desired designs can be developed and produced in the qualities basic line, Polyespro® self-adhesive and Polyespro® PreCoiled.

Examples

QR code

DIN 2403

Custom design

ISO 14726 with additional information

NORSOK single markers

NORSOK wrap

Single markers custom design

INSTALLATION POSITIONS

Pipemarkers must installed at locations where it needs to be observed considering:
- Operational aspects
- Approach routes
- Working platforms
- Expected access positions

At key locations such as
- Near valves
- Both sides of connection points of major equipment parts
- At each branching point
- Either side of walls, bulkheads, floors and other separation points
- Adjacent to stairs and platforms
- Start and end of pipe racks
- Positions with traffic crossing under pipe racks
- Inlet and outlet of a process train

INSTALLATION SERVICES

Because of our long experience managing and executing pipe marking projects in the industry, oil & gas, offshore and marine sectors, and our extensive knowledge of regulations and standards, we can assist you in the process of the development of piping identification processes.

THE STORY OF T-ISS:
FOUR DECADES OF SAFETY

The people behind the company have decades of experience in the Marine Industry. We perfectly understand the importance of reliable, accessible and price quality ratio products, services and turn-key solutions. Therefore, we primarily deal with the Safety, Marine and offshore Industry and can provide the fastest and most comprehensive offers on Solas Safety Products, Fire Isolator EV car fire containment, IMO safety signage products and implementation projects, Low Location Lighting, Solas Tapes and Pipe Marking Tapes.

The impact of incidents can be devastating on human and marine life as well as on expensive property. Also, the effect of an incident on community and economic prosperity can be extensive, for many years after the actual incident. In some cases, also the environment is at risk. By providing the maximum level of safety using our safety products and signage, we provide a proactive and positive influence on the environment.

We are extremely proud to be one of the leading players in the Marine Industry and we are dedicated to achieve much higher goals. Our long tradition of thinking in terms of solutions and our strategic and innovative approach of working, helps us in our ambition to be the market leader.
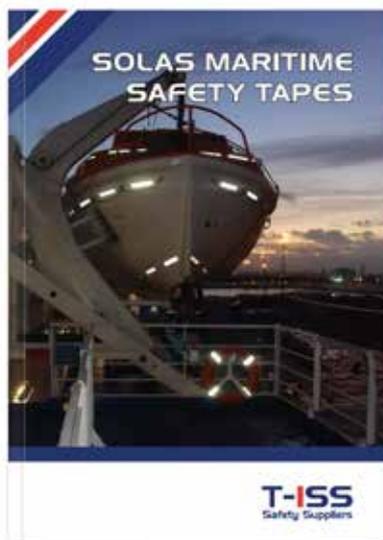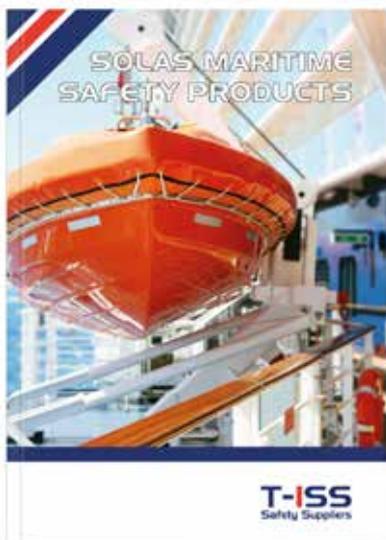
Check our catalogs at t-iss.com for more Safety Sign Products, Maritime Safety Products, and SOLAS Safety Tapes.

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