



Pre-PUR® - premium polyurethane is a special mix of ether polyurethane and ester polyurethane; block
The copolymers of Pre-PUR® includes in their composition the solid as well as the soft particles of the segment, which makes the better properties of that product unlike the conventional one.



HT-PUR – High-temperature polyurethane. Suitable for continuous operation at temperatures from 125°C to 150°C. 40% improved mechanical stability for long exposure of high temperatures and less sensitivity to the effects of the aging compared to other materials.



Abrasion-resistant – (resistance to scratches). The high quality of the polyurethane mixes as well as the optimized and fortified materials leads to significant less wear of pumps and transporting processes compared to other kinds of hoses. Special geometric design of the primary points of wear. Special materials mixtures resistant to high temperatures are used.
NORRES uses materials of mixtures which provides high stability of the dimensions when the polyurethane hoses are used in high temperatures. The geometrical profile of polyurethane hoses
NORRES is optimized to enable the product to resist axial stiffness, while maintaining good flexibility. Less corrugated inner surface applied in vacuum means longer service life.



NORRES hoses with that symbol are special designed for use in workshops and floor. They are able to withstand the crushing somewhat or entirely, when the vehicle pass through them or occur.

For more information, please refer to the detailed description of that product.



Smooth inner surface

Many of the NORRES hoses are with smooth inner surface surface and thus optimized for flow (conductors of different substances).

They have the following advantages:

towering flow conductivity, low pressure loss, reducing the requirements for blowing power, lower operating costs. Softer material for conductors.

Low wear and therefore longer life.



High flexibility level

That symbol is used only for NORRES hoses, which have high flexibility level and have the following characteristics:

Minimum reactive and restoring force in bending.

Optimal for use as intake facilities.



Ether-PUR – Eter-polyurethane

For many of the NORRES hoses is used special high quality eter-polyurethane instead of the often used for commercial applications ester-polyurethane.

Hoses of this type have the following advantages:

resistant microbes, resistant to hydrolysis (which is crucial for wet applications at higher temperatures and for use in tropical climates), better chemical resistance than comparable ester-polyurethanes, greater flexibility at low temperatures comparable ester-polyurethanes.

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Approved for use in the food industry

NORRES hoses with that symbol have one or more international approvals and certificates of conformity, which allows to be used for application in the food industry. For more information, please refer to the detailed description of that product.

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Without plasticizers

Today, plasticizers are often unwelcome in the hoses for a variety of different reasons:

- More brittle material, which is due to migration can lead to premature failure the hose;
- Some plasticizers are classified as a possible health risk;
- Plasticizers are often banned for certain applications;
- Plasticizers can be problematic in case of fire, leading to higher costs for cleaning
- in many areas, there are problems with the removal.

NORRES hoses with this symbol are 100% free of plasticizers!

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Flame retardant hoses

NORRES hoses with that symbol have one or more international approvals and certificates of conformity classifying them as having low flammability, or self-fire and / or falling below a certain level of burning.



Partially colored

Strengthen your position in the market through consistent application of your corporate design

help distinguish you from the competition. Creating a unique "view" to protect after-sales business, and reduce the risk of product liability in unadulterated form.

Using a patented production method, AIRDUC® PROTAPÉ® and hoses can also be colored area on the edge, depending on customer requirements. Compared with fully

colored hoses partially colored design gives the impression of much more flexible and lighter products. Moreover, transparent hose is possible to observe the process directly.

Please note the special subsection.



Without content of PVC

Hose with a PVC, can't easily and immediately be recognized (as PU hose with PVC-coated wires) are in the market. Increasingly PVC- it is unacceptable for the following reasons:

- Problems with its removal (in many cases it is PVC – products classified as hazardous waste);
- Higher costs for cleaning after fire;
- Many users have issued a general option prohibition against the use of PVC
- Import duties on PVC products in certain countries;

Plasticizers are classified as hazardous to health possible in some cases.

NORRES hoses with this symbol are 100% free of PVC.



Electrostatic discharge

Pumping of solids and liquids through pipes and hoses can accumulate discharge, friction between the conduction materials and friction in the middle can lead to accumulation of electrostatic (charge separation). Hose types AIRDUC ®, PROTAPÉ ® (except PROTAPÉ ® MEMORY) и BARDUC have a steel wire embedded in the wall of the hose, which they

allows to electrostatic discharge and provides the following advantages:

- To avoid accumulation of static charge and discharge hose, or pumping environment can lead to ignition;
- Possible frightening electrostatic shock reaction in contact with the body, which can lead to accident, is largely avoided;
- Less interference in the process because the material adhering to the walls of the hose;
- Significantly reducing the noise in measurements and control gear;
- NORRES hoses, which are classified as having the ability to electrostatic discharge as new German Commercial Rules of the Association № 132 (BGR132, previously ZH1/200) are indicated by this symbol. The prerequisite for this is the grounding of the hose through

the exposure of steel coil and then connected to the conductive fittings.



Antistatic or conductive hoses

According to the new ATEX Directive and German BGR 132, electro hoses should be used in areas where there is danger of explosion. Products of this type are characterized by special character. Please refer to the relevant product description for more information and to technical application



Hoses with special attached conductor

Many types of hose are designed with rolled steel firmly embedded in the wall. This strong adhesion is key prerequisite for the stability of the product, pressure resistance and axial rigidity, which in turn has a significant impact on the life of the hose.

Work conditions such as oils or solvents, dispersion in the wall, the combination of mechanical and dynamic loads and particularly high or low temperatures, often an essential obstacle to achieving a durable adhesion between the steel coiled wire and the wall.

Our long experience has taught us that individual wires can cause increased asymmetric folding of the hose, which usually leads to significantly shorter life, much greater pressure losses and disruption in the long run in the wires. Hoses manufactured using our special, highly advanced, multi-process bonding are marked with this symbol. Extremely long service life, realized with these products - even when subjected to severe combined loads - otherwise you will remain unattainable.



Permanent antistatic hoses

In the past, hose with antistatic properties were mainly produced using additives which disappeared over time, so antistatic material is gradually lost. The desired antistatic properties could often only be guaranteed if the ambient air is sufficient humid.

Thanks to new innovative materials of NORRES, all hoses marked with this symbol are permanently antistatic. Their antistatic properties are not dependent on relative humidity nor their effect is deteriorating due to loss of properties.