

telle

... for you always the right thing!



Hoses
Feeder Hoses
with wear monitoring

Our products Hoses and fittings

Our experts will be pleased to advise you in detail. Specialists from a diverse field work on the best solution for you.

Engineers and application technicians meet the requirements and use the necessary knowledge and years of experience.

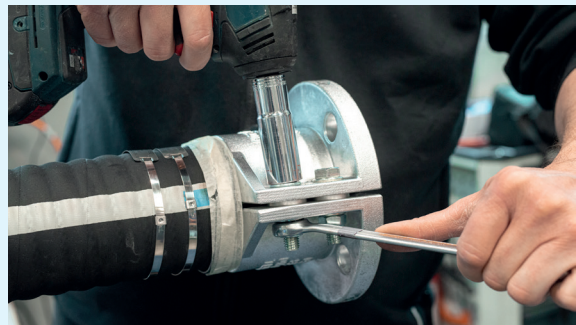
Please ask for our brochures

- Rubber hoses
 - Plastic hoses
 - Chemical hoses
 - Food hoses
 - Food suction hoses
 - Metal hoses

 - Storz couplings
 - Shell fittings with flange
 - Kamloc couplings
 - Food fittings
 - Tank truck couplings
 - Pressed aluminium shells
 - Cardan couplings
 - Dry couplings
- and much more.

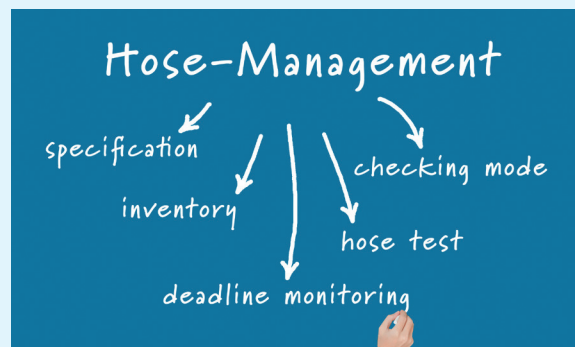
Hose service

- Fittings made of steel, stainless steel, brass, light metal and plastic are in stock !
- Binding of hoses
- Fast problem solveing through by expert advice and execution !



Hose management

- Specification according to customer requirements
- Inventory and cataloguing
- Hose test incl. marking
- Deadline monitoring



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Marking: ceratel® 5910 ceramic-antistatic

Description

ceratel® 5910 is a robust high-performance material handling hose with black, corrugated cover, designed for the transport of extremely abrasive bulk materials. Ceramic platelets (Al_2O_3) are incorporated in the rubber lining of the hose with the result that abrasion resistance of the inner lining of ceratel® 5910 is considerably increased compared to conventional material handling hoses made of rubber or rubbercoated metal pipes.

The hose construction guarantees excellent flexibility which makes ceratel® 5910 a multi-purpose and cost efficient solution in process technology. The hose is easy to assemble and not only mechanical demands, such as vibrations, tensions and abrasion, but also chemical and thermal strains can be handled easily.

The high-performance material handling hose ceratel® 5910 is the combination of the reliable materials rubber and ceramic. The recommended coupling solution is our system GRANIT Select.

Construction

(pneumatic and hydraulic conveying)

Inliner

ceramic platelets (Al_2O_3), incorporated in black, antistatic rubber

Reinforcement

textile inserts and steel spiral
(minimum burst pressure = 3,2 x operating pressure)

Cover

EPDM, black, antistatic, resistant to abrasion, ozone and UV

Temperature range

-40 °C bis +120 °C

Application

process and plant engineering, conveyor technology

Media

Especially abrasive bulk materials such as ground glass, quartz sand, sand, metallic blasting abrasives, milled goods, powders and dusts. Also for primary fuels such as coal and coke.

Resistance

Ceramic platelets (Al_2O_3) are positioned in the rubber core of the hose in such a manner that they considerably increase the abrasion resistance of the core of the ceratel® 5910 as compared with commercial rubber feeder hoses or rubber lined metal pipes.

Special features

A signal cable is incorporated in the wall of the hose and is led outwards on both ends of the hose. With proper connection, the cable serves the purpose of signaling a critical degree of wear on the inner layer of the hose.

Please contact our Application Technology Department in the event of extreme loading capacities.

Feeder hose for highly abrasive bulk materials with wear monitoring



Data table

Inner-Ø [mm]	Outer-Ø [mm]	Bending radius [min. mm]	Vacuum [bar]	Operating pressure [bar]	Weight [kg/m]	Length [m]
25	53	130	-0,9	10	2,9	10
32	60	140	-0,9	10	3,5	10
40	73	150	-0,9	10	4,4	20
50	83	200	-0,9	10	5,2	20
65	98	300	-0,9	10	7,0	20
80	113	400	-0,9	10	8,0	20
102	133	500	-0,9	10	9,5	10
127	164	600	-0,9	10	10,4	10
152	189	800	-0,9	10	12,5	10
203	246	1800	-0,9	10	16,2	10
253	293	2500	-0,9	10	23,6	10
305	352	3000	-0,9	10	31,0	10

GRANIT 4280 BC



Marking: TEKNIKUM – GRANIT – Antistatic

Description

The GRANIT feeder hose is a robust version suitable for very strong chemical and mechanical requirements, such as vibration, stress and abrasion.

Elastomeric feeder hoses offer considerable advantages in planning and in operation compared to rigid pipe systems. Rubber is elastic, waterproof, airtight and more wear-resistant than metallic materials. Abrasion and corrosion have little chance. Elastomeric materials deform reversibly without damaging the structure. In contrast to hard materials, rubber elastically absorbs the motion energy of transported solids. The most suitable elastomer qualities can be determined for each process engineering condition. Thus, the greatest possible service life at maximum wear resistance becomes a calculable quantity.

Construction

(pneumatic and hydraulic conveying)

Inliner

SBR, black, conductive

Reinforcement

textile inserts and steel spiral

Cover

SBR, black, conductive

Temperature range

–40 °C bis +80 °C

Application

process and plant engineering, conveyor technology

Media

Especially abrasive bulk materials such as ground glass, quartz sand, sand, metallic blasting abrasive, milled goods, powders and dusts. Also for primary fuels such as coal and coke.

Resistance

Inliner resistant against abrasion. The surface texture counteracts incrustation and sedimentation.

Special features

A signal cable is incorporated in the wall of the hose and is led outwards on both ends of the hose. With proper connection, the cable serves the purpose of signaling a critical degree of wear on the inner layer of the hose.

Please contact our Application Technology Department in the event of extreme loading capacities.

Feeder hose with wear monitoring



Data table

Inner-Ø [mm]	Outer-Ø [mm]	Bending radius [min. mm]	Vacuum [bar]	Operating pressure [bar]	Weight [kg/m]	Length [m]
25	53	120	-0,9	10	2,20	40
32	60	150	-0,9	10	2,60	40
40	73	150	-0,9	10	3,40	40
50	83	200	-0,8	10	3,80	40
65	98	200	-0,8	10	4,80	40
80	113	200	-0,8	10	6,70	40
102	133	400	-0,8	10	7,85	20
127	164	500	-0,8	10	10,36	20
152	189	750	-0,8	6	12,00	20
203	246	1750	-0,8	6	18,00	10
253	293	2000	-0,8	6	20,60	10
305	352	2200	-0,8	6	31,00	10
350	407	2500	-0,8	6	41,00	10
405	462	3000	-0,6	6	47,50	10

heavytel® 5980 metall



Marking: heavytel® 5980 metall

Description

heavytel® 5980 is a high-performance feed hose, which is characterized by a particularly stable and abrasion-resistant inner layer. In hydraulic and/or pneumatic conveyance of highly abrasive flow media, the inner layer of heavytel® 5980 is exposed to highest stresses. High conveying speeds lead to, depending on the medium, impact and/or friction wear.

heavytel® 5980 is a product solution, which counteracts particularly the impact wear. In the rubber soul, metal platelets are vulcanized so that the hose is suitable for applications in which conventional rubber conveyor hoses are overstrained and in which even hoses with an inner layer of rubber/ceramic reach their limits.

In applications where especially secondary fuels (fluff) have to be conveyed, heavytel® 5980 has a good service life. Due to the combination of selected rubber compounds, especially in the rubber bed of the steelplatelets, heavytel® 5980 is suitable for a wide range of applications and shows an excellent wear resistance. We recommend our GRANIT Select coupling system as integration.

Construction

(pneumatic and hydraulic conveying)

Inliner

steel platelets (Hardox) embedded in black, antistatic rubber

Reinforcement

textile and steel spiral
(minimum burst pressure = 3,2 x operating pressure)

Cover

SBR, black, antistatic, resistant to abrasion, ozone and UV

Temperature range

-40 °C bis +80 °C

Application

process and plant engineering, conveyor technology

Media

Secondary fuels (fluff), high mechanical strength like glass or batch.

Resistance

The inliner is made of vulcanized metal platelets for highly abrasive flow media.

Special features

A signal cable is incorporated in the wall of the hose and is led outwards on both ends of the hose. With proper connection, the cable serves the purpose of signaling a critical degree of wear on the inner layer of the hose.

Please contact our Application Technology Department in the event of extreme loading capacities.

High-feeder hose with wear monitoring



Data table

Inner-Ø [mm]	Outer-Ø [mm]	Bending radius [min. mm]	Vacuum [bar]	Operating pressure [bar]	Weight [kg/m]	Length [m]
25	53	120	-0,9	10	4,5	10
32	60	150	-0,9	10	4,7	10
40	73	150	-0,9	10	5,1	10
50	83	220	-0,9	10	5,4	10
65	98	330	-0,9	10	6,6	10
80	113	430	-0,9	10	8,1	10
102	133	530	-0,9	10	10,6	10
127	164	650	-0,9	10	12,9	10
152	189	870	-0,9	10	18,0	10
203	246	1950	-0,9	10	29,4	10

GRANIT UPE



Marking: TEKNIKUM – MADE IN FINLAND

Description

GRANIT UPE is a robust high-performance conveying hose with a black corrugated cover, designed for the transport of particularly abrasive bulk materials. Both mechanical stresses, such as vibrations, tensions, abrasion, as well as chemical and thermal strains can be equally handled.

The antistatic conveying hose GRANIT UPE is especially designed for the hydraulic conveying of chemical solids. The materials used for inliner and cover are antistatic. The electrical resistance of the hoses is between 1×10^3 and $1 \times 10^6 \Omega \text{m}$. The corresponding hose coupling GRANIT Select is also made of antistatic material.

Construction

(hydraulic conveying)

Inliner

UPE, black, antistatic

also available: white with black control points

Zwischenschicht

EPDM, conductive

Reinforcement

textile and steel spiral

(minimum burst pressure = 3,2 x operating pressure)

Cover

EPDM, black, antistatic, resistant to abrasion, ozone and UV

Temperature range

–20 °C bis +100 °C

Application

conveyor technology, hydraulic conveying

Media

liquid chemical media

Resistance

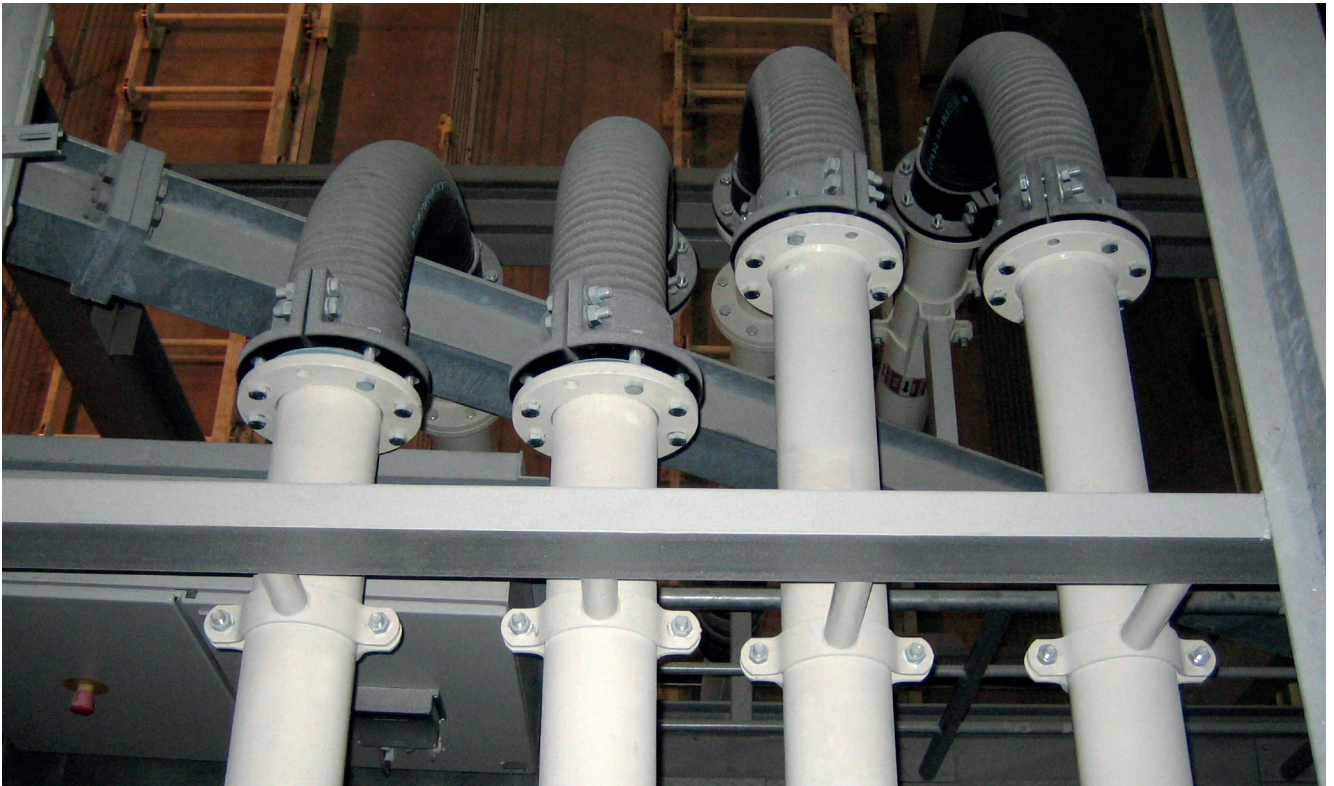
Against a large number of chemical media.

Special features

A signal cable is incorporated in the wall of the hose and is led outwards on both ends of the hose. With proper connection, the cable serves the purpose of signaling a critical degree of wear on the inner layer of the hose.

Please contact our Application Technology Department in the event of extreme loading capacities.

Material feeder hose with wear monitoring



Data table

Inner-Ø [mm]	Outer-Ø [mm]	Bending radius [min. mm]	Vacuum [bar]	Operating pressure [bar]	Weight [kg/m]	Length [m]
32	60	200	-0,9	10	2,7	40
80	113	400	-0,9	10	6,8	20
102	136	500	-0,9	10	7,9	20

GRANIT Select – Flange coupling



GRANIT Select couplings are especially designed for GRANIT hoses as regards construction, material and safe handling.

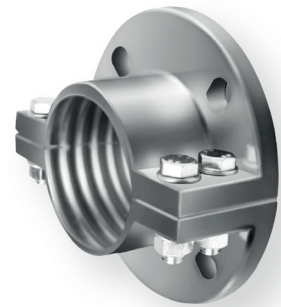
The material used is light-weight, strong and heat-resistant. The couplings can also be treated with a chemical-resistant surface coating. The dimensions of the flange bores correspond to DIN 2501 PN 10 and ANSI 16.5 (150 PSI).

Together with suitable flat gaskets made of polypropylene or EPDM reliable full-flow flexible hose connections can be established.

All hose and coupling components can be quickly and easily assembled into a secure hose connection.

GRANIT Select aluminum coupling

- light weight
- high strength
- rustproof
- heat-resistant
- surface coating possible



GRANIT Plus – Flange coupling

GRANIT Plus consists of a metal-reinforced rubber molded part and a two-part flange to be attached behind it. The flanges are used for hoses, which are mainly used in heavy industry and mining, but due to their reliability and practicality they are also suitable for a number of other applications.

The most important advantage of the loose flange is the free, unobstructed central flow in the connection point, the elimination of elastomer seals and the and the possibility of free flange alignment, as well as the short design.



Wear monitoring systems

The following hose types are equipped with this system: ceratel® 5910, heavytel® 5980 metal, GRANIT 4280 BC and GRANIT UPE.

A continuous signal cable integrated into the hose wall is the necessary component for wear monitoring.

When appropriately connected to a monitoring system, this cable serves as a signal transmitter. If the critical degree of wear of the hose inner layer is reached, the monitoring system reacts with a corresponding

message. When creating a complete conveyor hose line, the signal cable is extended to the outside on both sides and can be connected to the monitoring system.

The user has the possibility to use different wear monitoring systems: The two ends of the cable are connected either point-by-point or to a plant-side PLC control system.

For point monitoring, the ET Easy Box leakage monitoring unit (figure) is used. The ET Easy Box provides information via an optical signal.



Example of wear monitoring with ET Easy Box.

ET Easy Box – Analog wear monitoring



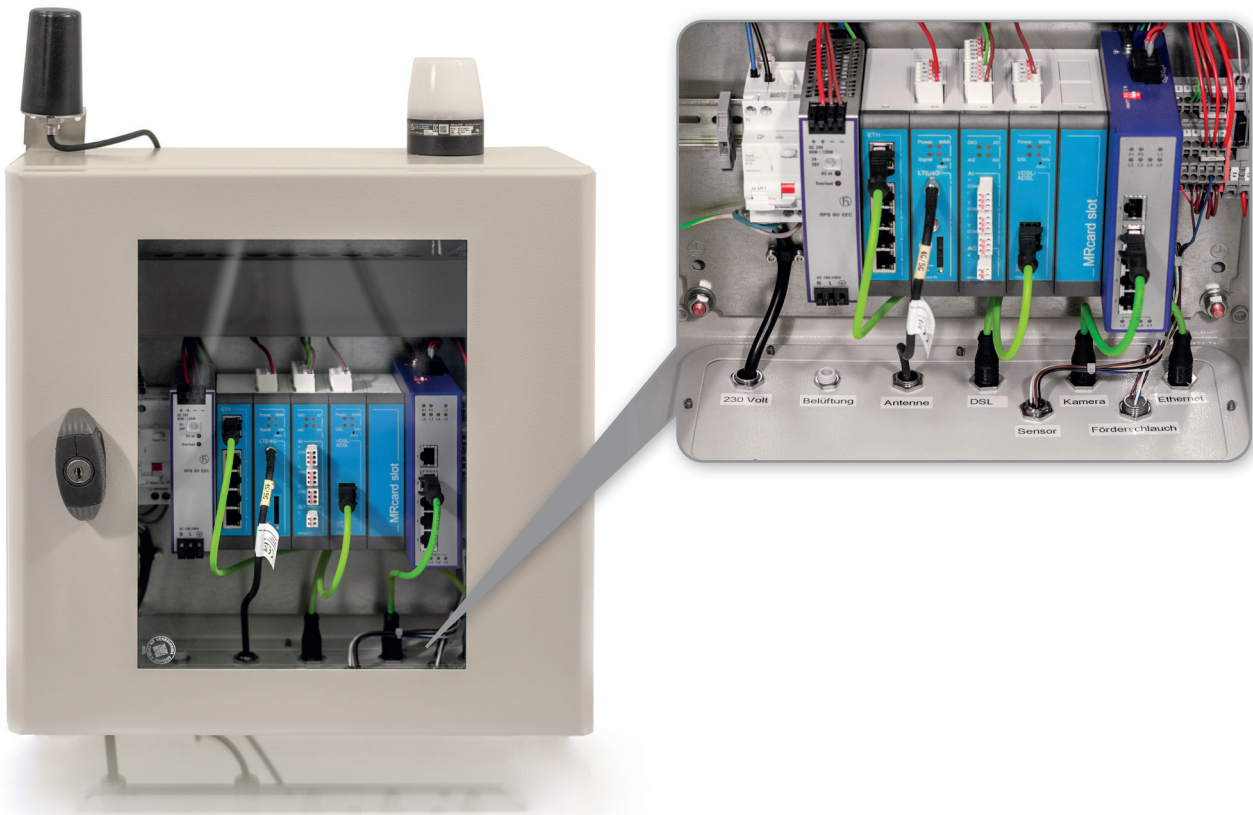
Article number 1090065065
Leakage monitoring unit
ET Easy Box with power supply (220V)

Article number 1090065070
Leakage monitoring unit
ET Easy Box with battery supply

The ET Easy Box informs via an optical signal.

Our application technology department is available for questions.

controtel® – Digital wear monitoring



The leakage monitoring unit controtel® enables remotely monitored, digital safety for conveying hose lines. In case of cable break in the conveying hose, system or power failure, controtel® sends a message via SMS or email before a possible leakage of the conveying line. A permanent test of the lines for pressure, temperature and humidity is optional.

Steel cabinet in industrial quality IP 65 with viewing window for wall mounting. Horn and light unit equipped with high quality components, antenna and 5 m data cable. Power supply of the unit with 230 volts.

Connections

Antenna, DSL, camera, Ethernet

Input

analog for pressure or temperature sensor

Output

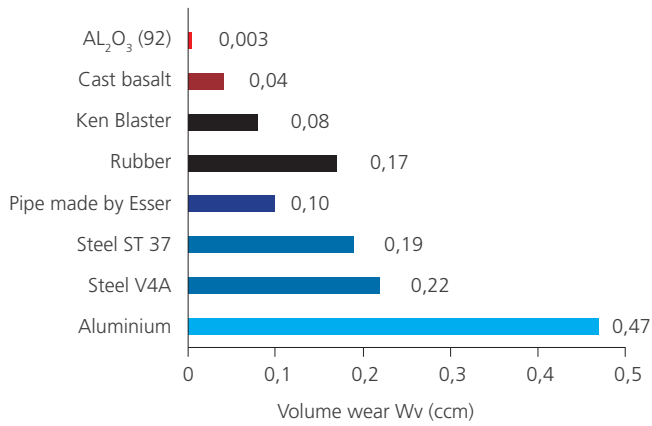
analog for optical (lamp) and acoustic signal (horn or ringtone)

Two cables with detachable plug connection are available for direct hose connection.

Dimensions

400 x 400 mm

Abrasive blasting wear – various wear protecting – materials



Test	Density	Mass wear [g]	Volume wear [ccm]
AL ₂ O ₃ (92)	3,69	0,01	0,003
Cast basalt	2,95	0,12	0,040
Ken Blaster	1,20	0,10	0,080
Rubber	1,18	0,20	0,170
Pipe made by Esser	7,75	0,80	0,100
Steel ST 37	7,85	1,51	0,190
Steel V4A	7,85	1,75	0,220
Aluminium	2,70	1,27	0,470

Beam angle: 30°
 Beam pressure: 5 bar
 Beam time: 5 min
 Blasting abrasive: Silicium (middle grain size ca. 200 µm)

References ET-Bayer

telle

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