

NEW



R. STAHL's Programme for Zone 2:

**How to reduce
risks and cut costs
safely in explosion
protection**

The STAHL logo, featuring the word "STAHL" in white capital letters inside a white octagonal border, set against a dark blue square background.

STAHL

Open for the Future

Exclusive from R. STAHL:

The first complete Ex material handling programme for Zone 2!

„Zone 2“ is nowadays a field of application for explosion-protected cranes and hoists with constantly growing importance.

Now that the EU has created the necessary legal basis, R. STAHL has developed a programme of explosion-protected cranes, wire rope hoists and crane components especially optimised for Zone 2 – the first in compliance with ATEX!

The specific advantages:

- Safe technology – customised for the requirements of „Zone 2“
- European requirements are met and in some cases exceeded: EC Directive 94/9/EC (ATEX 100a) for equipment group II, category 3G
Type of protection „n“ to EN 50021/IEC 60079-15
- Reduced costs compared with explosion protection solutions for „Zone 1“

The following table summarises the zone classification and the selection of equipment (equipment category according to 94/9/EC).



Gases, Mists, Vapours	Explosive atmosphere is present	Ex Programme from R. STAHL
Zone 0 > Category 1 G	continuously or for long periods	
Zone 1 > Category 2 G	occasionally	SHex Wire Rope Hoists Tex Chain Hoists Crane Components
Zone 2 > Category 3 G	rarely and for short periods	SHex n Wire Rope Hoists Crane Components

Type of protection „n“ adequate for Zone 2

The advantage of „Zone 2“ solutions is the reduced technical complexity simultaneously meeting the relevant regulations. Electrical equipment for Zone 2, category 3 G, must be designed in such a way that it ensures a normal standard of protection – corresponding to type of protection „n“ to EN 50021 / IEC 60079-15. This specifies that electrical equipment must not be capable of igniting a surrounding explosive atmosphere during normal operation and in certain abnormal conditions.





R. STAHL Ex-technology for Zone 2:

All components – complete solutions

Target exceeded: R. STAHL cranes and wire rope hoists for Zone 2

The explosion-protected cranes and SHex n electric wire rope hoists from R. STAHL for Zone 2 are supplied in **type of protection EEx ndeA IIB T3**. Part of the components are designed in type of protection „nA“ (non-sparking equipment) or in „nde“ (flameproof enclosure with junction box in increased safety). Thus the specifications for Zone 2 are met in full or even exceeded in some respects.

Hoist motor with long-life brake

R. STAHL SHex n electric wire rope hoists are equipped with special three-phase a.c. squirrel-cage motors for high number of switching operations per hour. The twin-disc magnetic brake is maintenance-free and has asbestos-free brake linings with an extremely long service life.

Maintenance-free gearbox in the most up-to-date technology

R. STAHL gearboxes have an extremely stable, completely enclosed housing. They are optimised for long life, reduced noise and low temperature rise. Lifetime oil lubrication.

Rope drive and drum: designed for a high standard of safety and long service life

Ultra-flexible special wire rope on the basis of DIN 3063 / 3067. The fine machining of the drum grooves minimises wear on the rope and the return sheaves are wear-resistant. Extremely robust bottom hook block with low headroom in spite of the generously dimensioned hook in A ST 52.



Monorail trolley

Controls especially optimised for Zone 2

The controls for hoist, trolley and crane have been developed especially for use in Zone 2: a high standard of safety thanks to weld-resistant main contactor for EMERGENCY STOP and long life of the contactors. The „sparking devices“ (mainly contactors) are installed in a flameproof enclosed panel box with a terminal box in increased safety (Ex nde). In this way installation and maintenance are simplified. Monitoring and control functions are designed in type of protection „Ex de“.

**Control pendant
SWH 5ex n**

**SWH 5ex n control pendant
NEW: TWO-STEP**

The new explosion-protected R. STAHL manual control pendant is two-step with up to 3 rockers for control of lifting, trolley travel and crane travel, each with two speeds.

Overload device standard, also for Ex n

Travel carriages with patented design

The monorail trolley can be infinitely adjusted to the beam width and is thus particularly simple to install. Standard flange width 300 mm.

The „rocker design“ of the double rail crab guarantees that all four wheels are always in contact with the rails.



Travel drive



**Specially adapted travel drives for
cranes, end carriages and cross travel
carriages**

Three-phase a.c. squirrel-cage motor, cylindrical rotor with additional flywheel mass for smooth acceleration and braking. Specially adapted temperature control for high number of switching operations per hour. The twin-disc magnetic brake is enclosed and has asbestos-free brake linings with an extremely long service life.

Special requests – whatever is needed

All R. STAHL cranes, hoists and components for Zone 2 reliably meet all technical, normative and practical requirements. We will be pleased to give you details on request. Over and above this, complying with special requests is also part of R. STAHL's programme: e.g. brass wheels, bronze-coated load hooks, stainless steel wire ropes and much more.

From a single supplier:

Integral competence for safety right down to the last detail

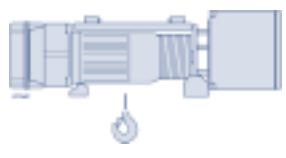


The R. STAHL Zone 2 programme comprises everything which is needed in material handling practice – from a single supplier:

- Single girder suspension cranes
- Single and double girder overhead travelling cranes
- Electric wire rope hoists
- Crane components: end carriages, travel drives, controls, control pendants, power supply systems and more
- Individual analysis of requirements and consulting

R. STAHL SHex n Wire Rope Hoists		Lifting capacity in kg according to FEM					Type	Hoisting speed		Hook path by drum length			
		1Am 1Am	2m 2m	2m 3m	3m 3m	3m 4m		50 Hz 60 Hz [m/min]	L2	L3	L4	L5	
9.661 (Rope drive) 9.511 (Mechanism)	1Am	1600	1250	1000	SH 3005-25ex n 2/1	2/12,5	2,5/15	12	20				
					SH 3006-25ex n 2/1	2/12,5	2,5/15						
					SH 3008-20ex n 2/1	1,6/10	2/12						
		3200	2500	2000	SH 3005-25ex n 4/1	1/6,3	1,2/7,5	6	10				
					SH 3006-25ex n 4/1	1/6,3	1,2/7,5						
					SH 3008-20ex n 4/1	0,8/5	1/6						
3200		2500	2000	1600	SH 4008-25ex n 2/1	2/12,5	2,5/15	12	20				
					SH 4010-25ex n 2/1	2/12,5	2,5/15						
					SH 4012-20ex n 2/1	1,6/10	2/12						
					SH 4016-16ex n 2/1	1,3/8	1,5/9,6						
6300		5000	4000	3200	SH 4008-25ex n 4/1	1/6,3	1,2/7,5	6	10				
					SH 4010-25ex n 4/1	1/6,3	1,2/7,5						
					SH 4012-20ex n 4/1	0,8/5	1/6						
					SH 4016-16ex n 4/1	0,6/4	0,7/4,8						
6300		5000	4000	3200	SH 5016-25ex n 2/1	2/12,5	2,5/15	12	20	40			
					SH 5020-25ex n 2/1	2/12,5	2,5/15						
					SH 5025-20ex n 2/1	1,6/10	2/12						
					SH 5032-16ex n 2/1	1,3/8	1,5/9,6						
12500		10000	8000	6300	SH 5016-25ex n 4/1	1/6,3	1,2/7,5	6	10	20			
					SH 5020-25ex n 4/1	1/6,3	1,2/7,5						
					SH 5025-20ex n 4/1	0,8/5	1/6						
					SH 5032-16ex n 4/1	0,6/4	0,7/4,8						
12500		10000	8000		SH 6040-20ex n 2/1	1,6/10	2/12	12	20	40	60		
					SH 6050-16ex n 2/1	1,3/8	1,6/9,6						
					SH 6063-12ex n 2/1	1/6,3	1,2/7,5						
25000		20000	16000		SH 6040-20ex n 4/1	0,8/5	1/6	6	10	20	30		
					SH 6050-16ex n 4/1	0,6/4	0,7/4,8						
					SH 6063-12ex n 4/1	0,5/3,1	0,6/3,7						

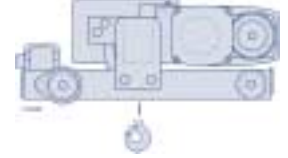
Further detailed information – including higher lifting capacities, outputs, weights and dimensions – is to be found in our Product Information brochures. Please request the ones you need!



Hoisting unit for stationary installation



Hoisting unit with monorail trolley



Hoisting unit with double rail crab

Further technical data and safety information

Standard travel speeds

50 Hz: 5/20 m/min
60 Hz: 6,3/25 m/min

Explosions protection to EN

EEx ndeA IIB T3
Our „Zone 1 Programme“ is available for higher rated types of explosion protection up till EEx de IIC T4

Type of enclosure EN/IEC

Standard IP 54, Option IP 66
Permissible ambient temperatures
Standard –20 up till +40°C
Option +60°C

Electrical data

Operating voltage:
50/60 Hz 220 up till 690 V
Control voltage:
48 VAC, 42 VAC, 230 VAC

R. STAHL:

Extra-class Ex protection – world-wide!

In material handling, explosion protection is a special discipline of fundamental importance. Not only does it ensure safety, it also provides for productivity and efficiency – particularly in severe exterior conditions.

R. STAHL has over 80 years' experience in the field of explosion protection. The foundation is provided by R. STAHL's own basic research and systems development, as well as by the provision of explosion protection solutions from one supplier: many components contributing to the explosion protection of an R. STAHL crane installation

are manufactured by ourselves. Explosion protection engineering for individual safety solutions is also part of the R.STAHL product spectrum.

R. STAHL is today the world's leading and most competent partner for explosion protection solutions for Zone 1 and – with this new development – Zone 2. Numerous approvals for Zone 1 underscore this – from the Federal Physico-Technical Institute in Braunschweig just as from other inspection authorities e. g. in Belgium, Canada, Poland, Switzerland, the Czech Republic and Hungary.

Further information – fast and comprehensive

We will be pleased to send you further literature on request – please send us your requirements:

- Product Information for SH ex wire rope hoists and crane components for Zone 2
- Product Information for SH ex wire rope hoists and crane components for Zone 1
- Product Information for T ex chain hoists for Zone 1

We would also be pleased to respond to your request for a personal discussion – free of charge and without obligation of course. Just suggest a date!



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