

Smart anchoring
solutions



Heavy-Duty Anchors

Mechanical and chemical anchoring solutions
for every installation



What makes the Diamond Walraven brand unique?

We connect the needs of our customers to the strengths of our company. With our wide product range and expert advice, we can provide complete solutions for every aspect of any project, no matter how large or complex.

The combination of our product systems, know-how and services enables us to deliver smart product solutions. This is how we provide added value to our customers through smart solutions. We understand our products are small parts within potentially huge projects. We know how important it is for even the smallest part to do its job properly and make your work easier and more efficient. Even the tiniest parts can deliver great value if constructed, applied and supplied in smart ways. And that is what we do, every day.

Continuous development

We are constantly working on bringing smarter solutions to the market. Diamond Walraven has over 60 active patents listed and we register new patents each year.

System thinking

We think beyond individual products. Our products are designed as product systems that combine and support each other.

Technical support

To support our customers in using our product systems efficiently we share our technical know-how.

Tailor-made services

Smart packaging, smart logistics, and smart IT solutions that add value to your daily work.

Co-engineering

We can take our technical support one step further. Personal relationships with customers help us understand and act on their needs. We can offer tailor-made solutions to specific project demands.

*The internationally operating
DiamondWalraven Group develops,
produces and sells innovative
products.*

*For decades, these have been
making work easier every day for
tens of thousands of installation
companies. As well as providing
products and support, we're happy
to advise, efficient approach
allows us to provide integrated fixing
solutions, acting as a one stop shop
for all your needs.*

75 years of global innovation and support

Walraven Group is a top player in the worldwide installation market. The company, headquartered in Mijdrecht, the Netherlands, has its own European production facilities and sales offices around the world and has been guaranteeing the highest quality for 75 years.



Since 1942, Walraven has been manufacturing and supplying a wide range of materials used by installers across the world, allowing them to save time during assembly and offering the highest degree of reliability in operation. Walraven products are used by tens of thousands of installers in Europe, North America, Latin America, Africa, the Middle East, Asia Australia and New Zealand. Each individual product is part of a total system solution. These are used in countless utility construction projects, as well as offshore, shipbuilding, industrial and infrastructural building projects.

Our products are market-oriented, innovative, perfectly suited to customer needs and deliver the highest possible performance. All products have the required approvals and our organisation is ISO 9001:2008 certified. With our wide product range and expert advice, we can provide a solution for every aspect of any project, no matter how large or complex.

The Walraven Group

Walraven Group is present on every continent.

We have 15 sales offices, 8 production facilities and service centres around the world.

Our people have up-to-date, in-depth knowledge of our products and systems as well as local preferences, regulations and requirements. This local knowledge allows us to provide consulting and support anywhere, with the aid of our logistical and partner network.



Walraven product family

Development of new products has always been our priority, with a primary focus on customer satisfaction. All of our solutions are based on a fully integrated approach allowing us to provide total custom solutions for any project. Walraven's product offering meets all regulatory requirements of today's markets. Combined with our expertise and testing capabilities, we can help architects and builders meet all today's challenges in even the most complex projects.

The Walraven Group has production facilities in various countries, with machines often designed in-house. Each facility has its own specialties, which allows products to be manufactured in the most efficient manner possible. Almost all our tooling and moulds are produced in our own tool making facility. Walraven manages the entire process, from concept to manufacturing, and can quickly respond to developments in the market. We can also deliver bespoke products if required.

Pipe Fixing Systems

Fire Protection

Walraven
Product Series

Sanitary Systems



⊕ Heavy-Duty Anchors

Heavy-Duty Anchors

Walraven offers a complete programme of metal and chemical anchors as well as advice and dedicated calculation software, delivering the right solution for any specific load requirement. These products perfectly fit in with our existing offerings and philosophy, from the attractive packaging and clear instructions to expert advice and after-sales service. We also have test tool equipment that directly supports our expertise on the job site.

- Drop in anchors
- Concrete screws
- Throughbolt anchors
- Highload anchors
- Shield anchors
- Ceiling anchors
- Chemical anchors

Electrical and mechanical fixings

Fixing Systems for plumbing, mechanical services, solar and electrotechnical installations.

- Pipe Fixing Systems
- Rail Support Systems
- Support Systems for Rooftop Installations
- UltraProtect® 1000: Support system for indoor and outdoor use
- Britclips® spring steel clips for fixing of conduits, cables and cable trays

Fire protection

Fire Protection Systems consists of a wide range of sealing products for passive fire protection of mechanical and electrical installations. The strength of the Fire Protection System lies in the combined use of certified Pacifyre®.

- Pipe and cable penetrations
- Expansion joints, seams and void spaces
- Penetrations for lighting in fire-rated ceilings
- Penetrations for electrical socket/switches in fire-rated walls
- Various fire tested fixing products

Sanitary systems

This system contains frames for fixing sanitary ware to system walls, pre-walls and solid walls. Our frames have been tested for load capacity and corrosion resistance in accordance with European standards.

- Walkon® WC-elements
- Vario® elements for height adjustable WC

⊕ Rail Support Systems

Choosing the right solution

Walraven offers ideal chemical and/or mechanical anchors for different applications. Our product guides and expert team aim to help you find the best solution for your application.

Our calculation software makes it possible to find complete solutions in one software environment. This includes the ideal fixing solution as well as advice on complementary Walraven products, such as our RapidStrut® and RapidRail® rails, cantilever arms, threaded rods and wallplates.

To select and install an anchor correctly, the following factors should be considered:

- Environmental conditions such as humidity or presence of chemicals
- The base material which the anchor will be fixed to, such as concrete and solid or hollow masonry structures
- Anchor spacing and edge distances
- Load-bearing capacity
- Load type (static/dynamic) and direction (tension/shear/combined)
- Fixed element type
- Load type and direction
- The type of element to be fixed to a wall or ceiling

When selecting a solution, you first need to determine whether the load will be static or dynamic. A stationary object will exert a static load. Moving objects add a second load to this: the dynamic load, which results from stresses caused by movement, such as wind or vibrations from machinery.

The type of load is another important factor to consider. An object can exert a load at a right angle to the anchor, called a shear load, or a load parallel to the anchor known as a tensile loads (pull-out) or a combination of both. Wall anchors generally experience both while ceiling anchors are mainly meeting pull-out force.

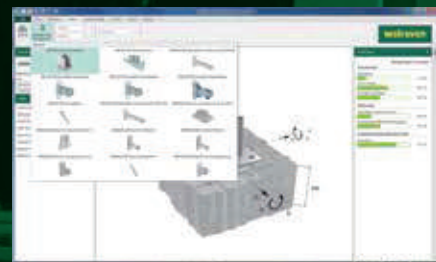




Walraven Anchors Design software

Discover which anchor is the best choice for any given application and load simply by entering the relevant details. Planners and specifiers can quickly and easily carry out calculations and select the right anchors. ETA and other applicable certification and technical support are all part of the package.

The user-friendly tool is based on decades of R&D and practical experience with building projects and fasteners of all types.



Register and download our calculation software:
walraven.com/anchors

Basics of Anchoring

Chemical Anchors

Walraven Injection System

Chemical anchors are held in place by adhesives. Applied loads are transferred to the substrate by adhesion between anchor/resin and resin/substrate interfaces. Anchors are supplied as a two-piece set, containing resin (in cartridge form) and a steel element. In cases involving hollow substrates, a plastic mesh sleeve may be introduced as a third system component. Chemical anchors minimise introduction of stresses in the substrate material, owing to absence of expansion forces.

Commonly, resin is used for its ease of application and strength. Walraven Injection System (WIS) anchors can be placed closer together than mechanical anchors, as the concrete around closely spaced mechanical anchors may fail. Chemical anchors can secure both dynamic and static loads. The chemical provides a watertight seal between bolt and base material. However, loads can not be applied until the chemical has set. You will find all relevant data related to installation and hardening times in our labels and assessment documents.

In addition to static and dynamic load forces, other factors to consider include safety and environmental concerns, the material in which the anchor is attached, dimensional considerations, and how the anchor must perform over time. Walraven threaded rods are extremely strong, but attention must be paid to the correct application.



Mechanical anchors

Mechanical anchor fasteners rely on friction to keep themselves in place. Usually, they will expand slightly once slotted into a hole. A mechanical anchor will typically leave a slight gap between the fastener and the base material. Loads can be applied immediately after installation. There are several types of mechanical anchor:

- Torque-controlled expansion anchors can transfer dynamic and static loads and are most frequently used
- Deformation-controlled expansion anchors
- Screw anchors



Torque-controlled expansion anchors and deformation anchors compress concrete around the expansion mechanism, usually close to the end of the anchor. Applied loads are transferred to the substrate through friction between the anchor and the wall of the drilled hole. Friction is the result of expansion force, achieved by applying torque to the bolt or nut. Expansion anchors come in two varieties: wedge and sleeve types. Tightening a nut or bolt expands wedge anchors. When the nut on a sleeve anchor is tightened, a sheet-metal sleeve around a stud is pushed against the sides of the hole with a conical mandrel.

In the case of deformation-controlled expansion anchors, applied loads are transferred to the substrate through friction between the anchor and the wall of the drilled hole. Friction is the result of expansion force, achieved by displacement of a wedge component. This deforms the anchor body, creating anchorage.

When inserted into a drilled hole, screw anchors expand, thereby exerting pressure on the cavity walls and keeping themselves in place. This makes it possible to attach items to porous or hollow walls. A dowel can be used to attach the screw.

Base material/substrate

The base material and its associated properties are critical in selection and application of an anchor without substrate damage, as well as safe performance under load.

Concrete

In its standard form, concrete is a compound of cement, aggregates and water. It usually possesses high compressive strength, while tensile strength is comparatively low. In lightweight concrete heavy aggregate is replaced by light additives such as pumice, slag or Styrofoam. Due to the lower compressive strength of these materials, lightweight concrete shows lower strength parameters.

To increase the low tensile strength of concrete, steel-reinforcing elements such as bars and wire mesh may be cast into the concrete member. Their function is to withstand tensile loads within the structure, which may otherwise lead to extensive crack formation within the tensile zone. Reinforcement does not guarantee elimination of cracking but does, however, limit the size of cracks significantly, ultimately leading to an admissible crack size.



We divide concrete into 'cracked' and 'non-cracked' categories, based on compression and tension zone. (Compression is on top and tension is from the bottom, these are defined as option 1 and option 7 in ETA.)

Masonry

Masonry walls are multi-layer substrates consisting of blocks of heterogeneous material, structured by applying mortar. The compressive strength of the block material is usually higher than that of the mortar. The connectors should, as a rule, be installed within the body of the block.

Solid blocks with compact structure.

These are made of ceramic or silica materials, have no internal cavities and possess relatively high compressive strength. Hollow blocks with compact structure. These have several internal cavities

and possess reasonably low compressive strength, despite being made of ceramic or silica, relatively high compressive strength materials

Solid blocks with porous structure.

These have no but feature high concentrations of pores or inclusions of other materials. Examples include aerated concrete or solid blocks of lightweight concrete. Materials in this category possess low compressive strengths.

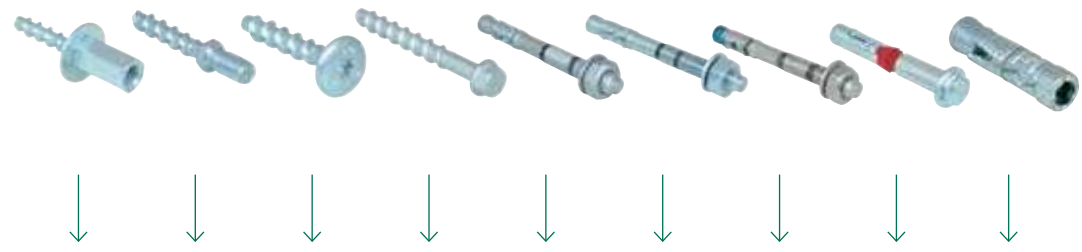
Hollow blocks with porous structure.

Like solid porous blocks these elements have low compressive strength and possess internal cavities. In most cases, these blocks are made of lightweight concrete.

Corrosion protection

Fasteners and fixings are regularly tested in high salinity atmospheric conditions. All metal anchors for dry applications inside in low corrosion risk environments are zinc electroplated and passivated. Other anti-corrosion measures taken include traditional protective measures such as use of stainless steel as the primary material in wet outdoor or aggressive corrosion conditions. Modern protective technologies, such as Zinc Flake coatings (our throughbolt WTB1 and concrete screw WCS1H) are also utilised.

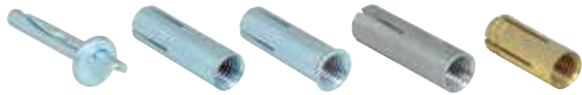
Anchor selector



Mechanical Anchors		WCS1N	WCS1M	WCS1P	WCS1H	WTB1	WTB7	WTB1 SS†	WHA1	WSA1
Page number		16	18	20	22	26	29	32	36	40
Material	Zinc Plated	•	•	•	•		•		•	•
	Zinc Plated + Zinc Flake				•	•				
	Stainless Steel (SS†)							•		

Substrates	Non-cracked Concrete	•	•	•	•	•	•	•	•	•
	Cracked Concrete	•	•	•	•	•		•	•	•
	Silicate Brick	•	•	•	•					•
	Solid Brick	•	•	•	•					•
	Hollow Brick	•	•	•	•					•
	Aerated Concrete									
	Stone	•	•	•	•	•	•	•		•

Certification	ETA	•	•	•	•	•	•	•	•	•
	Seismic				•				•	
	Fire	•	•	•	•	•		•	•	•



WCA1	WDI1	WDI1L	WDI1 SSt	WBA	Chemical Anchors	WPSF	WVSF	WPER	WIS-TR	WIS-SB
44	48	50	52	56	Page number	60	62	64	70	71
•	•	•			Zinc Plated				•	•
					Zinc Plated + Zinc Flake				•	
			•		Stainless Steel (SSt)				•	

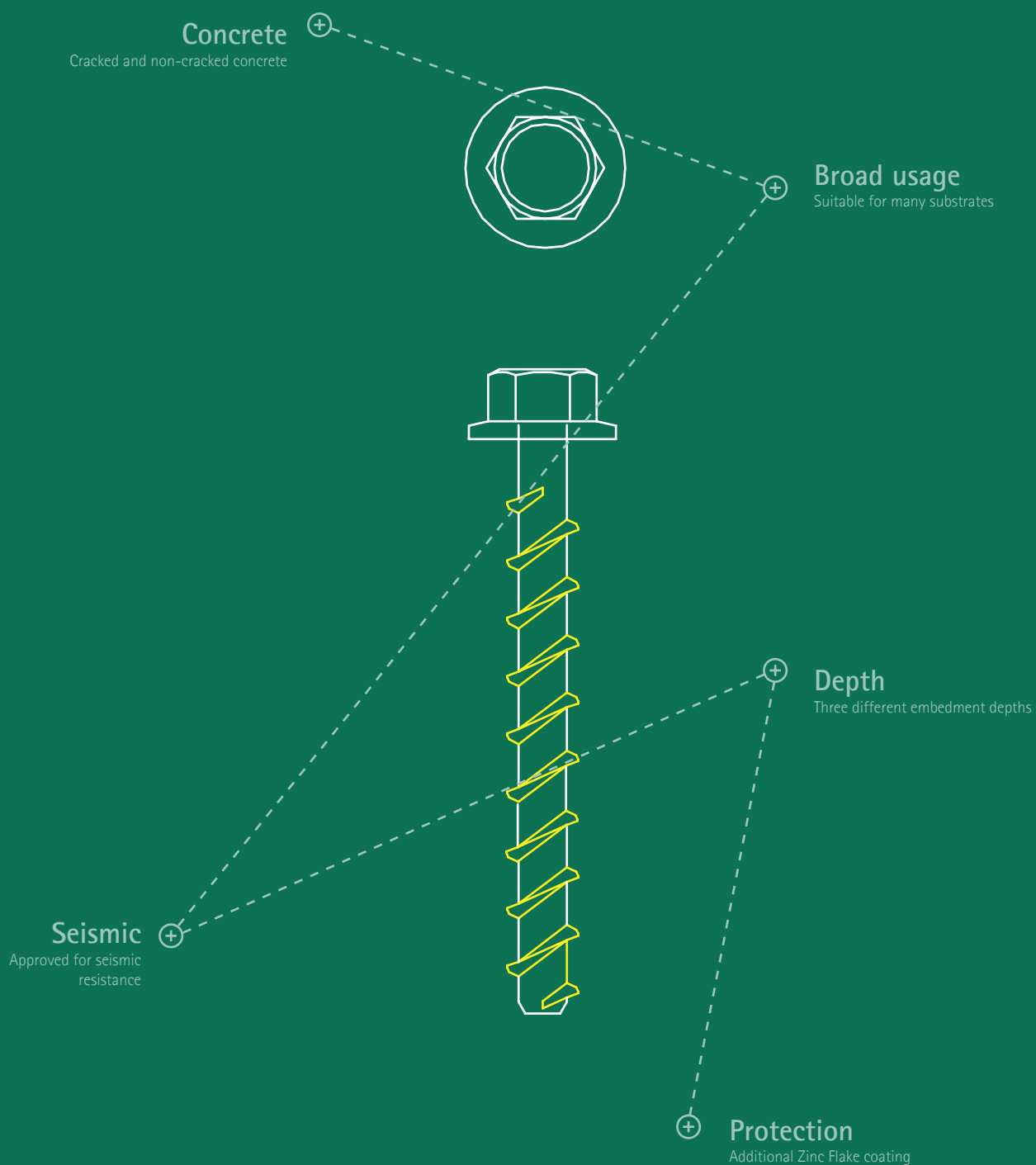
•	•	•	•	•	Non-cracked Concrete	•	•	•		
•	•	•	•		Cracked Concrete		•	•		
					Silicate Brick	•				
					Solid Brick	•				
					Hollow Brick	•				
					Aerated Concrete	•				
					Stone	•				

•	•	•	•		ETA	•	•	•		
					Seismic		•	•		
•	•	•	•		Fire		•	•		

Mechanical Anchors



WCS Concrete Screws



WCS1N Concrete Screws

Product overview

The WCS1N is equipped with an SW13 head and is available in three anchoring depths. This solution offers an outstanding performance in cracked as well as non-cracked concrete. The WCS1N is suitable for overhead installations and for use with Walraven rail systems. It can be used with a variety of substrates and hollow core slabs.



Multiple use



Fire resistance

Material

Zinc plated

Head type

SW13

Connection with M8
and M10 rod



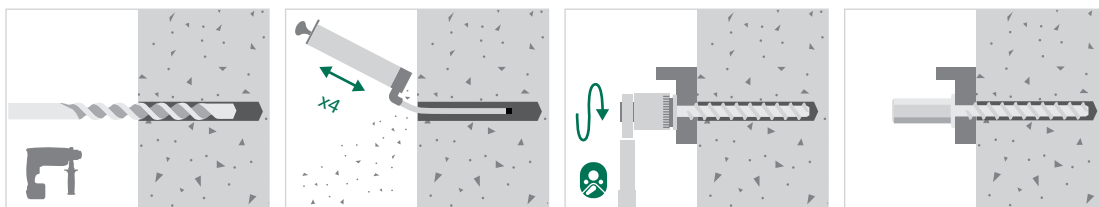
Features and benefits

- High performance in cracked and non-cracked concrete
- Suitable for fitting overhead installations
- Approved for hollow core slabs
- Suitable for many substrates
- 1 anchoring depth (625 3 606)
- 3 anchoring depths (625 3 696)
- Suitable for use with Walraven rail systems

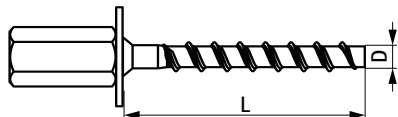
Substrate type

- Non-cracked Concrete
- Cracked Concrete
- Hollow Core Slab

Installation guide



Product information



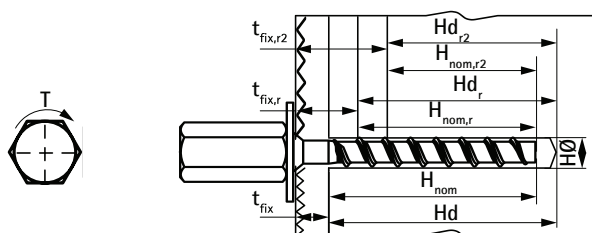
Part No.	Description	D (mm)	L (mm)	Box qty (pc)	Outer box qty (pc)
625 3 606	WCS1N 6x35 M8/10	7.5	35	50	800
625 3 696	WCS1N 6x55 M8/10	7.5	55	50	800

Loads

Characteristic resistance value in:

Part No.	non-cracked concrete	cracked concrete	non-cracked concrete	cracked concrete	Partial safety factor
	V Rks Shear Load (kN)	V Rks Shear Load (kN)	N Rks Tension Load (kN)	N Rks Tension Load (kN)	
625 3 606	7,00	7,00	1,50	1,50	1,8
625 3 696	7,00	7,00	7,50	7,50	1,5

Installation data



Part No.	Setting depth:			Drill diameter:	Drilling depth:	Drilling depth reduced:	
	H _{nom} (mm)	H _{nom,r} (mm)	H _{nom,r2} (mm)	HØ (mm)	Hd (mm)	Hdr (mm)	Hdr2 (mm)
625 3 606	35	N/A	N/A	6	40	N/A	N/A
625 3 696	55	40	35	6	60	45	40

Fixed element thickness:

	Fixed element thickness:			Torque:
	T _{fix} (mm)	T _{fix,r} (mm)	T _{fix,r2} (mm)	T (max.) (Nm)
625 3 606	N/A	N/A	N/A	10,0
625 3 696	N/A	15	20	10,0

WCS1M Concrete Screws

Product overview

The WCS1M is equipped with an SW10 head and is available in three anchoring depths. It offers an outstanding performance in cracked as well as non-cracked concrete. The WCS1M is suitable for overhead installations and use with Walraven rail systems. It can be used with a variety of substrates and hollow core slabs.



Multiple use



Fire resistance

Material

Zinc Plated

Head type

SW10

Connection thread

M8



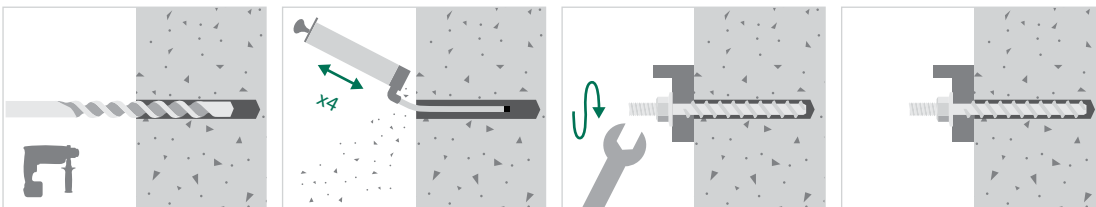
Features and benefits

- High performance in cracked and non-cracked concrete
- Suitable for fitting overhead installations
- Approved for hollow core slabs
- Suitable for many substrates
- 1 anchoring depth (625 3 104)
- 3 anchoring depths (625 3 106)
- Suitable for use with Walraven rail systems

Substrate type

- Non-cracked Concrete
- Cracked Concrete
- Hollow Core Slab

Installation guide



Product information



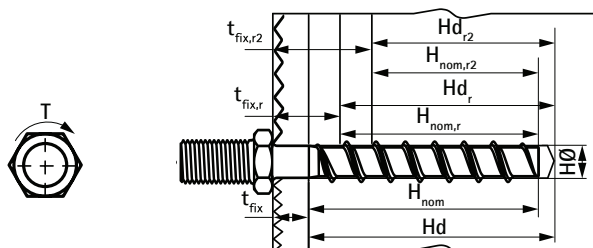
Part No.	Description	D (mm)	L (mm)	Box qty (pc)	Outer box qty (pc)
625 3 104	WCS1M 6x35 M8	7.5	35	100	800
625 3 106	WCS1M 6x55 M8	7.5	55	100	800

Loads

Characteristic resistance value in:

Part No.	non-cracked concrete	cracked concrete	non-cracked concrete	cracked concrete	Partial safety factor
	V Rks Shear Load (kN)	V Rks Shear Load (kN)	N Rks Tension Load (kN)	N Rks Tension Load (kN)	
625 3 104	7,00	7,00	1,50	1,50	1,8
625 3 106	7,00	7,00	7,50	7,50	1,5

Installation data



Part No.	Setting depth:			Drill diameter:	Drilling depth:	Drilling depth reduced:	
	H _{nom} (mm)	H _{nom,r} (mm)	H _{nom,r2} (mm)	HØ (mm)	Hd (mm)	H _{dr} (mm)	H _{dr2} (mm)
625 3 104	35	N/A	N/A	6	40	N/A	N/A
625 3 106	55	40	35	6	60	45	40

Fixed element thickness:

				Torque:
	T _{fix} (mm)	T _{fix,r} (mm)	T _{fix,r2} (mm)	T (max.) (Nm)
625 3 104	N/A	N/A	N/A	10,0
625 3 106	N/A	15	20	10,0

WCS1P Concrete Screws

Product overview

The WCS1P has a pan head. It offers an outstanding performance in cracked as well as non-cracked concrete. The WCS1P is suitable for overhead installations and for use with Walraven rail systems. It can be used with a variety of substrates and hollow core slabs.



Multiple use



Fire resistance

Material

Zinc Plated

Head type

Multipoint Drive
VZ30



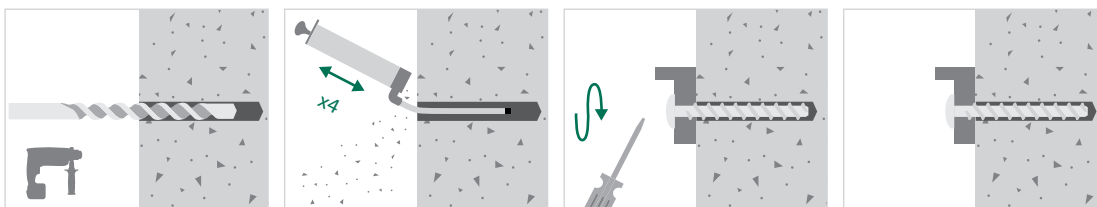
Features and benefits

- High performance in cracked and non-cracked concrete
- Suitable for fitting overhead installations
- Approved for hollow core slabs
- Suitable for many substrates
- 1 anchoring depth
- Suitable for use with Walraven rail systems

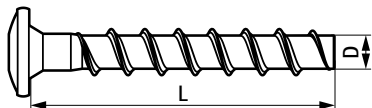
Substrate type

- Non-cracked Concrete
- Cracked Concrete
- Hollow Core Slab

Installation guide



Product information



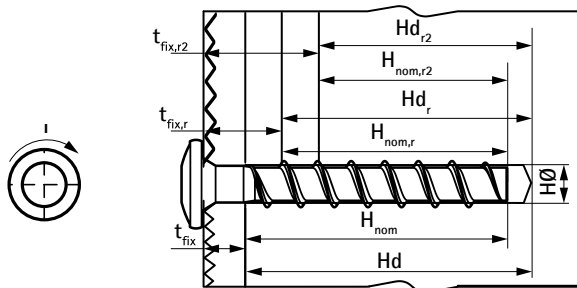
Part No.	Description	D (mm)	L (mm)	Box qty (pc)	Outer box qty (pc)
625 3 006	WCS1P 6x40	7,5	40	100	800

Loads

Characteristic resistance value in:

Part No.	non-cracked concrete	cracked concrete	non-cracked concrete	cracked concrete	Partial safety factor
	V Rks Shear Load (kN)	V Rks Shear Load (kN)	N Rks Tension Load (kN)	N Rks Tension Load (kN)	
625 3 006	7,00	7,00	1,50	1,50	1,5

Installation data



Part No.	Setting depth:			Drill diameter:	Drilling depth:	Drilling depth reduced:	
	H _{nom} (mm)	H _{nom,r} (mm)	H _{nom,r2} (mm)	HØ (mm)	H _d (mm)	H _{dr} (mm)	H _{dr2} (mm)
625 3 006	35	N/A	N/A	6	40	N/A	N/A

Part No.	Fixed element thickness:			Torque:	
	T _{fix} (mm)	T _{fix,r} (mm)	T _{fix,r2} (mm)	T (max.) (Nm)	
625 3 006	5	N/A	N/A	10,0	

WCS1H Concrete Screws

Product overview

The WCS1H has a hexagon head and is equipped with an innovative Zinc Flake coating that prevents corrosion. It offers an outstanding performance in cracked as well as non-cracked concrete. The WCS1H is approved for applications requiring seismic resistance and is suitable for use with Walraven rail systems. It can be used with a variety of substrates and hollow core slabs.



Fire resistance



Seismic
C1

Material

Zinc Plated with Zinc Flake

Head type

Hexagon Head with Washer
SW13 / SW15



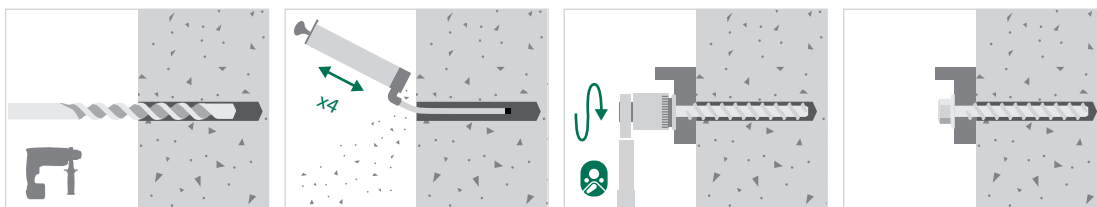
Features and benefits

- Innovative zinc flake coating preventing corrosion
- Suitable for many substrates
- *6253306 approved for hollow core slabs and multiple use
- 3 anchoring depths
- Suitable for use with Walraven rail systems
- ETA for usage in concrete

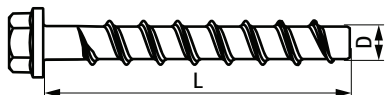
Substrate type

- Non-cracked Concrete
- Cracked Concrete
- Hollow Core Slab

Installation guide



Product information



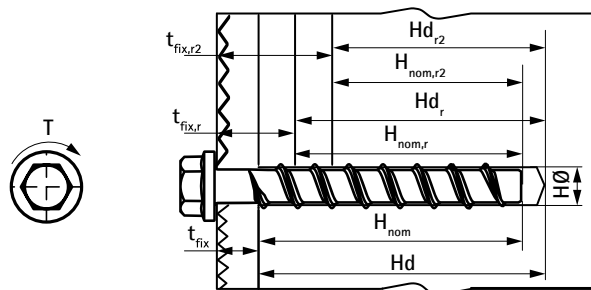
Part No.	Description	D (mm)	L (mm)	Box qty (pc)	Outer box qty (pc)
*625 3 306	WCS1H 6x60	7,5	60	100	800
625 3 408	WCS1H 8x70	10,6	70	50	400
625 3 418	WCS1H 8x80	10,6	80	50	400
625 3 428	WCS1H 8x100	10,6	100	50	N/A
625 3 438	WCS1H 8x120	10,6	120	50	N/A
625 3 509	WCS1H 10x90	12,6	90	50	N/A
625 3 510	WCS1H 10x100	12,6	100	50	N/A
625 3 512	WCS1H 10x120	12,6	120	50	N/A

*6253306 no seismic resistance and surface of product zinc plated only

Loads

Part No.	Characteristic resistance value in:				
	non-cracked concrete	cracked concrete	non-cracked concrete	cracked concrete	Partial safety factor
	V Rks Shear Load (kN)	V Rks Shear Load (kN)	N Rks Tension Load (kN)	N Rks Tension Load (kN)	
*625 3 306	7,00	7,00	7,50	7,50	1,5
625 3 408	17,00	17,00	16,00	12,00	1,5
625 3 418	17,00	17,00	16,00	12,00	1,5
625 3 428	17,00	17,00	16,00	12,00	1,5
625 3 438	17,00	17,00	16,00	12,00	1,5
625 3 509	34,00	34,00	25,00	9,00	1,5
625 3 510	34,00	34,00	25,00	9,00	1,5
625 3 512	34,00	34,00	25,00	9,00	1,5

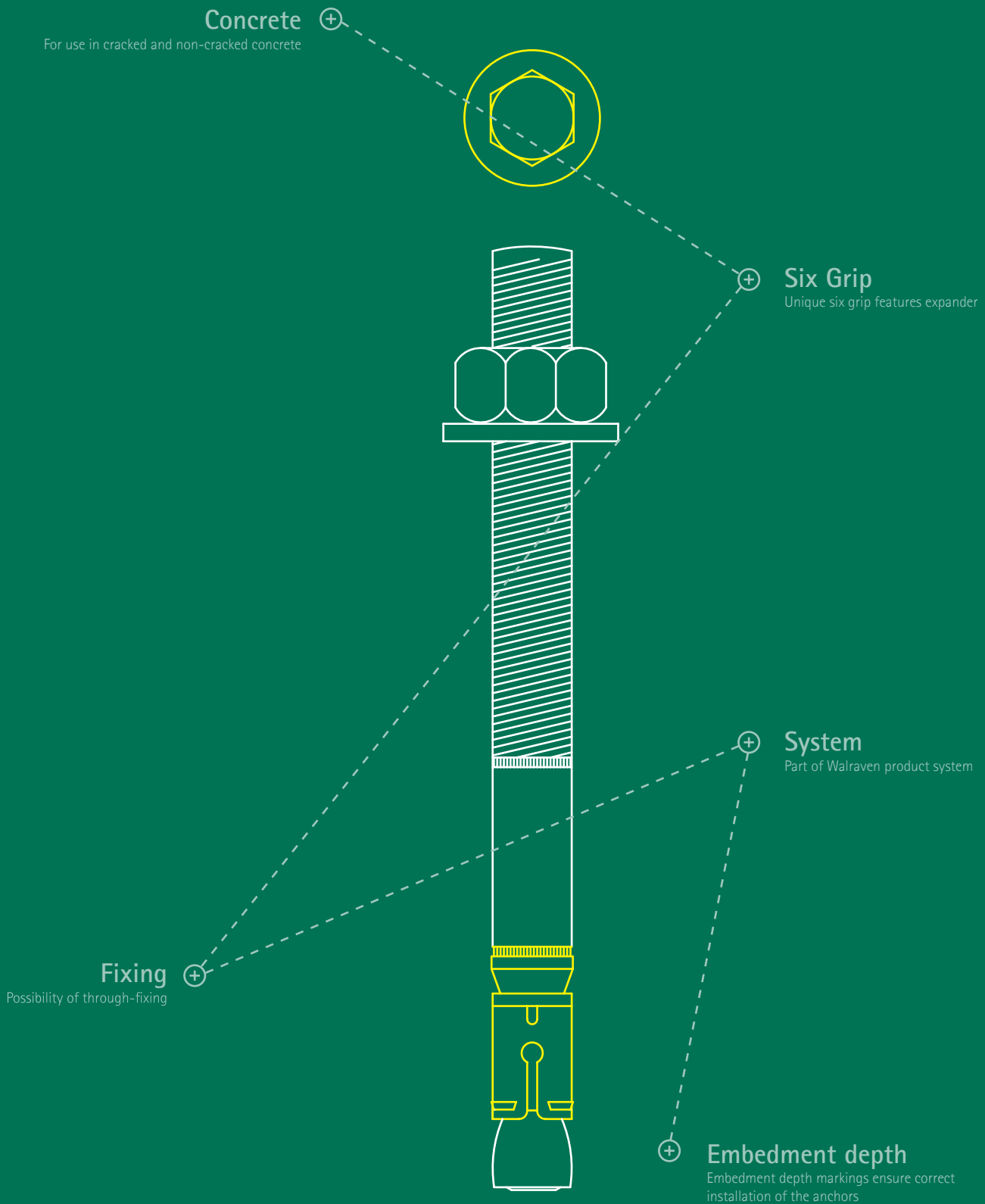
Installation data



Part No.	Setting depth:			Drill diameter:	Drilling depth:	Drilling depth reduced:	
	H _{nom} (mm)	H _{nom,r} (mm)	H _{nom,r2} (mm)	HØ (mm)	Hd (mm)	Hdr (mm)	Hdr2 (mm)
*625 3 306	55	40	35	6	60	45	40
625 3 408	65	55	45	8	75	65	55
625 3 418	65	55	45	8	75	65	55
625 3 428	65	55	45	8	75	65	55
625 3 438	65	55	45	8	75	65	55
625 3 509	85	75	55	10	95	85	65
625 3 510	85	75	55	10	95	85	65
625 3 512	85	75	55	10	95	85	65

Part No.	Fixed element thickness:			Torque:	Head size
	T _{fix} (mm)	T _{fix,r} (mm)	T _{fix,r2} (mm)	T (max.) (Nm)	SW1
*625 3 306	5	20	25	10.0	SW13
625 3 408	5	15	25	20.0	SW13
625 3 418	15	25	35	20.0	SW13
625 3 428	35	45	55	20.0	SW13
625 3 438	55	65	75	20.0	SW13
625 3 509	5	15	35	40.0	SW15
625 3 510	15	25	45	40.0	SW15
625 3 512	35	45	65	40.0	SW15

WTB Throughbolt Anchors



WTB1 Throughbolt Anchors

Product overview

The WTB1 has a loose bolt head with a hexagon nut. Setting depth markings ensure correct installation. This is the world's only ETA option 1 throughbolt with innovative Zinc Flake coating. It offers an outstanding performance in cracked as well as non-cracked concrete. The WTB1 is the world's most popular and widely-used anchor, allows through-fixing and is suitable for use with Walraven rail systems.



Fire resistance

Material

Zinc Plated with Zinc Flake

Head type

Loose bolt with hexagon nut



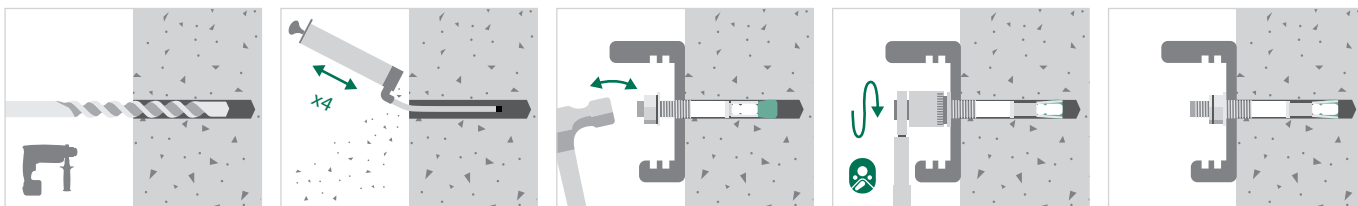
Features and benefits

- High performance in cracked and non-cracked concrete
- Innovative Zinc Flake coating preventing corrosion
- Possibility of through fixing
- Standard and reduced setting depth
- Setting depth markings ensure correct installation of the anchors
- Suitable for use with Walraven rail systems

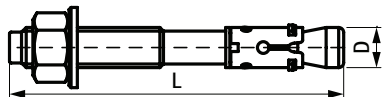
Substrate type

- Cracked Concrete
- Non-cracked Concrete
- Stone

Installation guide



Product information

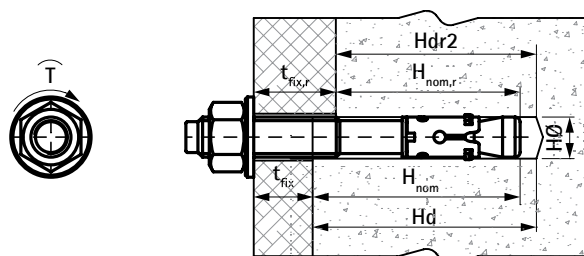


Part No.	Description	D (mm)	L (mm)	Box qty (pc)	Outer box qty (pc)
6098 3 1080	WTB1 8x80	8	80	100	N/A
6098 3 1081	WTB1 8x100	8	100	100	N/A
6098 3 1082	WTB1 8x115	8	115	100	N/A
6098 3 1100	WTB1 10x95	10	95	50	N/A
6098 3 1101	WTB1 10x115	10	115	50	N/A
6098 3 1102	WTB1 10x130	10	130	50	N/A
6098 3 1120	WTB1 12x120	12	120	50	N/A
6098 3 1121	WTB1 12x135	12	135	50	N/A
6098 3 1160	WTB1 16x140	16	140	25	N/A

Loads

Part No.	Characteristic resistance value in:				
	non-cracked concrete	cracked concrete	non-cracked concrete	cracked concrete	Partial safety factor
	V Rks Shear Load (kN)	V Rks Shear Load (kN)	N Rks Tension Load (kN)	N Rks Tension Load (kN)	
6098 3 1080	10,10	10,10	9,00	5,00	1,8
6098 3 1081	10,10	10,10	9,00	5,00	1,8
6098 3 1082	10,10	10,10	9,00	5,00	1,8
6098 3 1100	16,00	16,00	12,00	9,00	1,5
6098 3 1101	16,00	16,00	12,00	9,00	1,5
6098 3 1102	16,00	16,00	12,00	9,00	1,5
6098 3 1120	23,30	23,30	20,00	12,00	1,5
6098 3 1121	23,30	23,30	20,00	12,00	1,5
6098 3 1160	43,00	43,00	35,00	20,00	1,5

Installation data



Part No.	Setting depth:		Drill diameter:	Drilling depth:	Drilling depth reduced:	
	H _{nom} (mm)	H _{nom,r} (mm)	HØ (mm)	Hd (mm)	Hdr (mm)	Hdr2 (mm)
6098 3 1080	47	32	8	55	N/A	40
6098 3 1081	47	32	8	55	N/A	40
6098 3 1082	47	32	8	55	N/A	40
6098 3 1100	59	39	10	69	N/A	49
6098 3 1101	59	39	10	69	N/A	49
6098 3 1102	59	39	10	69	N/A	49
6098 3 1120	68	48	12	80	N/A	60
6098 3 1121	68	48	12	80	N/A	60
6098 3 1160	85	65	16	100	N/A	80

Part No.	Fixed element thickness:		Torque:	Head size
	T _{fix} (mm)	T _{fix,r} (mm)	T (max.) (Nm)	SW1
6098 3 1080	15	30	10.0	SW13
6098 3 1081	35	50	10.0	SW13
6098 3 1082	50	65	10.0	SW13
6098 3 1100	15	35	20.0	SW17
6098 3 1101	35	55	20.0	SW17
6098 3 1102	50	70	20.0	SW17
6098 3 1120	25	45	40.0	SW19
6098 3 1121	40	60	40.0	SW19
6098 3 1160	20	40	100.0	SW24

WTB7 Throughbolt Anchors

Product overview

The WTB7 has a loose bolt head with a hexagon nut. Setting depth markings ensure correct installation. It offers an extremely good performance in non-cracked concrete. The WTB7 allows through-fixing and is suitable for use with Walraven rail systems.



Material

Zinc plated

Head type

Loose bolt with hexagon nut



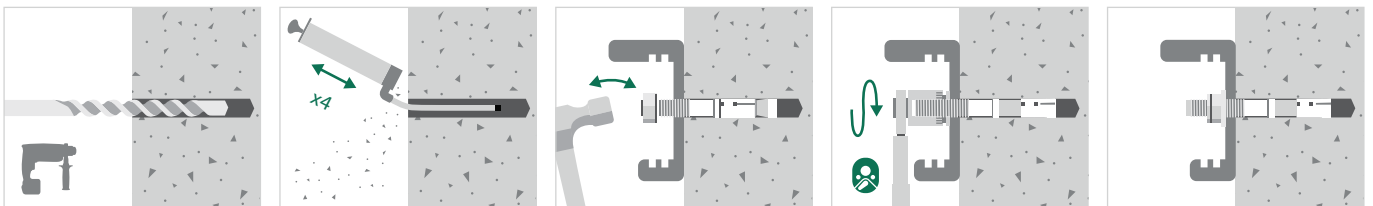
Features and benefits

- High performance in non-cracked concrete
- Unique six grip expander for better performance in concrete
- Possibility of through fixing
- Standard and reduced setting depth
- Setting depth markings ensure correct installation of the anchors
- Suitable for use with Walraven rail systems

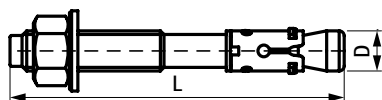
Substrate type

- Non-cracked Concrete
- Stone

Installation guide



Product information

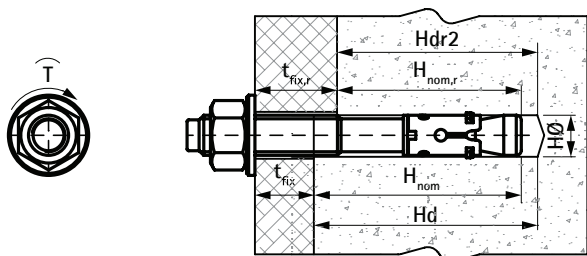


Part No.	Description	D (mm)	L (mm)	Box qty (pc)	Outer box qty (pc)
6098 3 7080	WTB7 8x75	8	75	100	N/A
6098 3 7081	WTB7 8x95	8	95	100	N/A
6098 3 7082	WTB7 8x115	8	115	100	N/A
6098 3 7100	WTB7 10x95	10	95	50	N/A
6098 3 7101	WTB7 10x115	10	115	50	N/A
6098 3 7102	WTB7 10x130	10	130	50	N/A
6098 3 7120	WTB7 12x100	12	100	50	N/A
6098 3 7121	WTB7 12x120	12	120	50	N/A
6098 3 7122	WTB7 12x150	12	150	50	N/A
6098 3 7123	WTB7 12x180	12	180	50	N/A
6098 3 7160	WTB7 16x150	16	150	25	N/A

Loads

Part No.	Characteristic resistance value in:				Partial safety factor
	non-cracked concrete	cracked concrete	non-cracked concrete	cracked concrete	
	V Rks Shear Load (kN)	V Rks Shear Load (kN)	N Rks Tension Load (kN)	N Rks Tension Load (kN)	
6098 3 7080	10,10	N/A	12,00	N/A	1,8
6098 3 7081	10,10	N/A	12,00	N/A	1,8
6098 3 7082	10,10	N/A	12,00	N/A	1,8
6098 3 7100	16,00	N/A	12,00	N/A	1,8
6098 3 7101	16,00	N/A	12,00	N/A	1,8
6098 3 7102	16,00	N/A	12,00	N/A	1,8
6098 3 7120	23,30	N/A	25,00	N/A	1,8
6098 3 7121	23,30	N/A	25,00	N/A	1,8
6098 3 7122	23,30	N/A	25,00	N/A	1,8
6098 3 7123	23,30	N/A	25,00	N/A	1,8
6098 3 7160	43,00	N/A	40,00	N/A	1,8

Installation data



Part No.	Setting depth:		Drill diameter:	Drilling depth:	Drilling depth reduced:	
	H _{nom} (mm)	H _{nom,r} (mm)	HØ (mm)	Hd (mm)	Hdr (mm)	Hdr2 (mm)
6098 3 7080	47	32	8	55	N/A	40
6098 3 7081	47	32	8	55	N/A	40
6098 3 7082	47	32	8	55	N/A	40
6098 3 7100	49	39	10	59	N/A	49
6098 3 7101	49	39	10	59	N/A	49
6098 3 7102	49	39	10	59	N/A	49
6098 3 7120	68	48	12	80	N/A	60
6098 3 7121	68	48	12	80	N/A	60
6098 3 7122	68	48	12	80	N/A	60
6098 3 7123	68	48	12	80	N/A	60
6098 3 7160	85	65	16	100	N/A	80

Part No.	Fixed element thickness:		Torque:	Head size
	T _{fix} (mm)	T _{fix,r} (mm)	T (max.) (Nm)	SW1
6098 3 7080	10	25	15.0	SW13
6098 3 7081	30	45	15.0	SW13
6098 3 7082	50	65	15.0	SW13
6098 3 7100	25	35	30.0	SW17
6098 3 7101	45	55	30.0	SW17
6098 3 7102	60	70	30.0	SW17
6098 3 7120	5	25	50.0	SW19
6098 3 7121	25	45	50.0	SW19
6098 3 7122	55	75	50.0	SW19
6098 3 7123	85	105	50.0	SW19
6098 3 7160	30	50	100.0	SW24

WTB1 SSt Throughbolt Anchors

Product overview

The WTB1 SSt is made entirely of stainless steel and has a loose bolt head with a hex nut. Setting depth markings ensure correct installation. It offers an outstanding performance in cracked as well as non-cracked concrete. The WTB1 SSt is the world's most popular and widely used anchor, allows through-fixing and is suitable for use with Walraven rail systems.



Fire resistance

Material

Stainless Steel

Head type

Loose bolt with hexagon nut



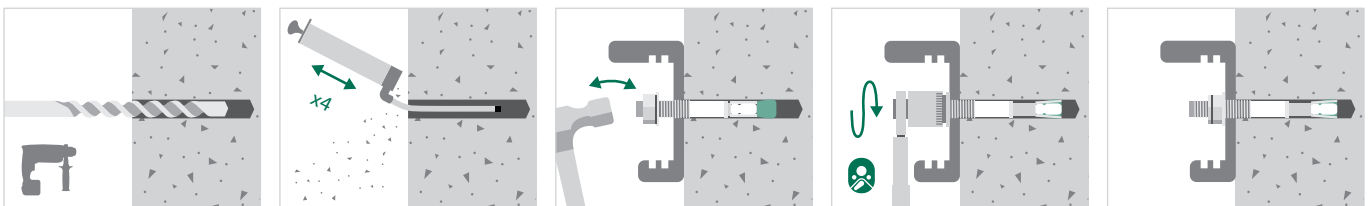
Features and benefits

- High performance in cracked and non-cracked concrete
- Corrosion resistant stainless steel
- Possibility of through fixing
- Standard and reduced setting depth
- Setting depth markings ensure correct installation of the anchors
- Suitable for use with ith Walraven Stainless Steel rail systems

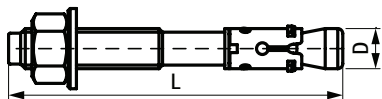
Substrate type

- Cracked Concrete
- Non-cracked Concrete
- Stone

Installation guide



Product information

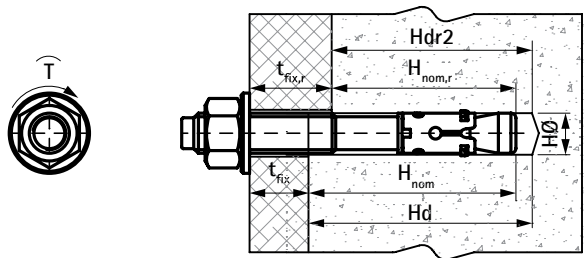


Part No.	Description	D (mm)	L (mm)	Box qty (pc)	Outer box qty (pc)
6098 7 1080	WTB1 SSSt 8x75	8	75	100	N/A
6098 7 1081	WTB1 SSSt 8x115	8	115	100	N/A
6098 7 1100	WTB1 SSSt 10x95	10	95	50	N/A
6098 7 1101	WTB1 SSSt 10x130	10	130	50	N/A
6098 7 1120	WTB1 SSSt 12x125	12	125	50	N/A
6098 7 1121	WTB1 SSSt 12x150	12	150	50	N/A

Loads

Part No.	Characteristic resistance value in:				
	non-cracked concrete	cracked concrete	non-cracked concrete	cracked concrete	Partial safety factor
	V Rks Shear Load (kN)	V Rks Shear Load (kN)	N Rks Tension Load (kN)	N Rks Tension Load (kN)	
6098 7 1080	11,70	11,70	9,00	6,00	1,8
6098 7 1081	11,70	11,70	9,00	6,00	1,8
6098 7 1100	18,50	18,50	16,00	9,00	1,5
6098 7 1101	18,50	18,50	16,00	9,00	1,5
6098 7 1120	24,60	24,60	25,00	12,00	1,5
6098 7 1121	24,60	24,60	25,00	12,00	1,5

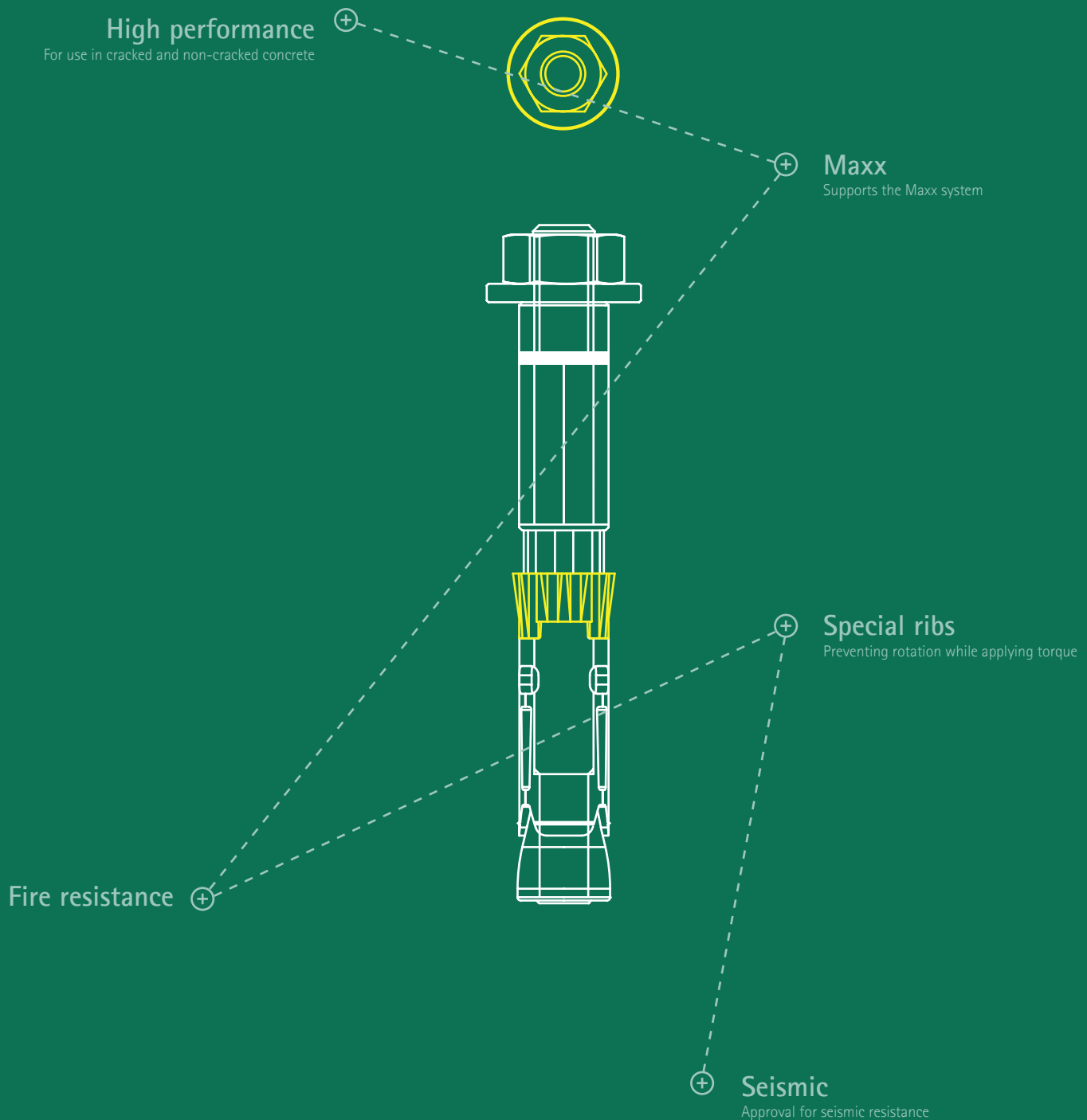
Installation data



Part No.	Setting depth:		Drill diameter:	Drilling depth:	Drilling depth reduced:	
	H_{nom} (mm)	$H_{nom,r}$ (mm)	$H\varnothing$ (mm)	H_d (mm)	H_{dr} (mm)	H_{dr2} (mm)
6098 7 1080	47	32	8	55	N/A	40
6098 7 1081	47	32	8	55	N/A	40
6098 7 1100	59	39	10	69	N/A	49
6098 7 1101	59	39	10	69	N/A	49
6098 7 1120	68	48	12	80	N/A	60
6098 7 1121	68	48	12	80	N/A	60

Part No.	Fixed element thickness:		Torque:	Head size
	T_{fix} (mm)	$T_{fix,r}$ (mm)	T (max.) (Nm)	SW1
6098 7 1080	10	25	15.0	SW13
6098 7 1081	50	65	15.0	SW13
6098 7 1100	15	35	30.0	SW17
6098 7 1101	50	70	30.0	SW17
6098 7 1120	30	50	50.0	SW19
6098 7 1121	55	75	50.0	SW19

WHA Highload Anchors



WHA1 Highload Anchors

Product overview

The WHA1 has a hexagon nut head and offers an outstanding performance in cracked as well as non-cracked concrete. In addition, it is fire protection approved (R30-R120). The WHA1 is approved for applications requiring seismic resistance and suitable for use with the Walraven Maxx system. This high load anchor, manufactured in 8.8 grade steel and is suitable particularly useful with smaller spacings and edge distances.



Fire resistance



Seismic
C1+C2

Material
8.8 Steel

Head type
Hexagon Headbolt



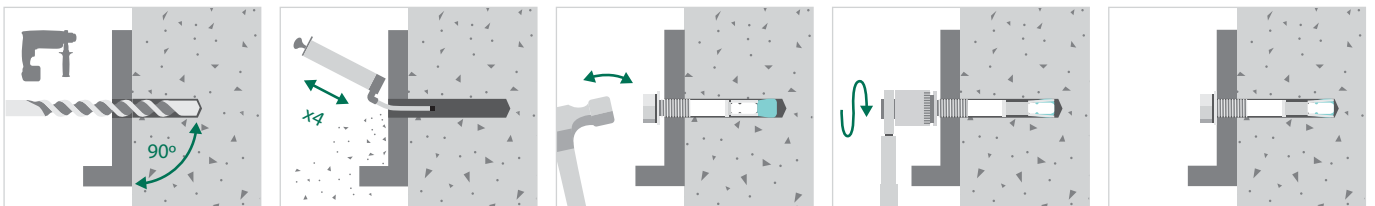
Features and benefits

- High performance in cracked and non-cracked concrete
- Approved for applications requiring seismic resistance C1 + C2
- Smaller spacings and edge distances
- Fire protection approved (R30-R120)
- Suitable for use with Walraven Maxx system

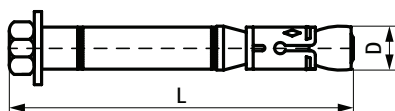
Substrate type

- Cracked Concrete
- Non-cracked Concrete

Installation guide



Product information

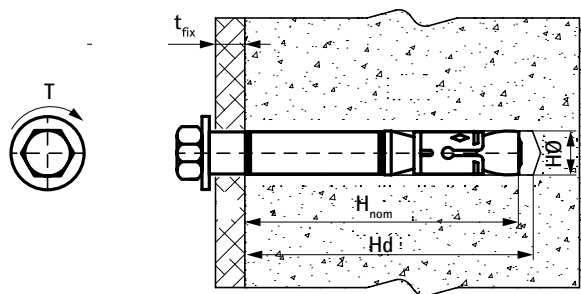


Part No.	Description	D (mm)	L (mm)	Box qty (pc)	Outer box qty (pc)
6098 3 2120	WHA1H 12x85	8	85	50	N/A
6098 3 2121	WHA1H 12x125	8	125	25	N/A
6098 3 2150	WHA1H 15x110	10	110	25	N/A
6098 3 2151	WHA1H 15x136	10	136	25	N/A
6098 3 2180	WHA1H 18x117	12	117	20	N/A

Loads

Part No.	Characteristic resistance value in:				Partial safety factor
	non-cracked concrete	cracked concrete	non-cracked concrete	cracked concrete	
	V Rks Shear Load (kN)	V Rks Shear Load (kN)	N Rks Tension Load (kN)	N Rks Tension Load (kN)	
6098 3 2120	29,00	29,00	20,00	6,00	1,5
6098 3 2121	29,00	29,00	20,00	6,00	1,5
6098 3 2150	46,00	46,00	30,00	9,00	1,5
6098 3 2151	46,00	46,00	30,00	9,00	1,5
6098 3 2180	67,00	67,00	36,00	12,00	1,5

Installation data



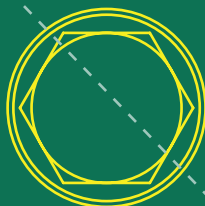
Part No.	Setting depth:		Drill diameter:	Drilling depth:
	H_{nom} (mm)	$H_{nom,r}$ (mm)	$H\varnothing$ (mm)	H_d (mm)
6098 3 2120	70	N/A	12	80
6098 3 2121	70	N/A	12	80
6098 3 2150	85	N/A	15	95
6098 3 2151	85	N/A	15	95
6098 3 2180	95	N/A	18	105

Part No.	Fixed element thickness:	Torque:	Head size
	T_{fix} (mm)	T (max.) (Nm)	SW1
6098 3 2120	10	30.0	SW13
6098 3 2121	50	30.0	SW13
6098 3 2150	15	50.0	SW17
6098 3 2151	45	50.0	SW17
6098 3 2180	10	80.0	SW19

WSA Shield Anchors

Broad usage

Suitable for many substrates



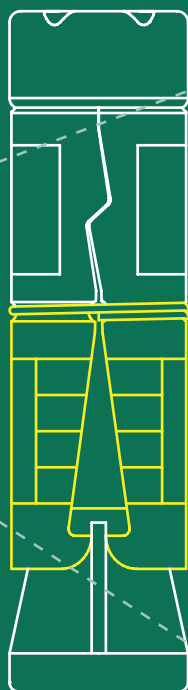
Threaded rod

Combines with threaded rod



Cold steel

Consistency of performance
and dimensional accuracy



High performance

For use in cracked and non-cracked concrete



WSA1 Shield Anchors

Product overview

The WSA1 is available with loose bolt with hexagon head or threaded rod and an expansion sleeve, which provides optimal load and safety in any substrate. Cold-formed steel elements guarantee consistency of performance and dimensional accuracy. The universal WSA1 is suitable for a very wide variety of substrates and handles medium to high loads excellently, thanks to a three-part expanding sleeve.



Fire resistance

Material

Zinc Plated

Head type

Loose bolt



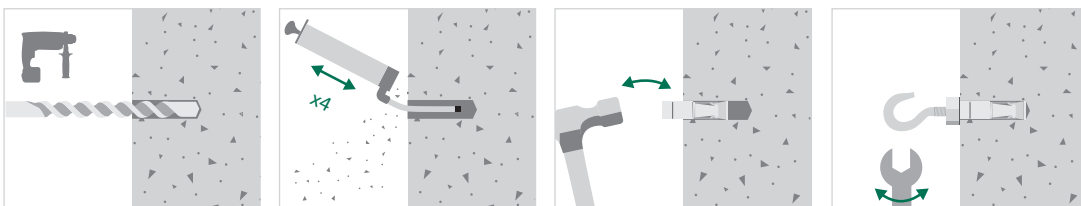
Features and benefits

- High performance in cracked and non-cracked concrete
- Expansion sleeve provides optimal load and safety in any substrate
- Available to use with loose bolt with hexagon head or threaded rod
- Cold formed steel elements for consistency of performance and dimensional accuracy
- Suitable for many substrates

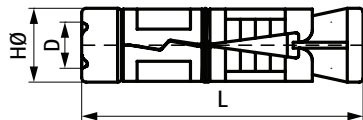
Substrate type

- Cracked Concrete
- Non-cracked Concrete
- Hollowcore Slab
- Masonry

Installation guide



Product information



Part No.	Description	D (mm)	L (mm)	Box qty (pc)	Outer box qty (pc)
610 3 608	WSA1 8x50	8	50	100	N/A
610 3 610	WSA1 10x60	10	60	100	N/A
610 3 612	WSA1 12x75	12	75	50	N/A
610 3 616	WSA1 16x115	16	115	25	N/A

Loads

Part No.	Characteristic resistance value in:				
	non-cracked concrete	cracked concrete	non-cracked concrete	cracked concrete	Partial safety factor
	V Rks Shear Load (kN)	V Rks Shear Load (kN)	N Rks Tension Load (kN)	N Rks Tension Load (kN)	
610 3 608	9,20	9,20	7,50	5,00	1,5
610 3 610	14,50	14,50	12,00	6,00	1,5
610 3 612	21,10	21,10	16,00	12,00	1,5
610 3 616	39,00	39,00	40,00	16,00	1,5

Installation data



Part No.	Setting depth:		Drill diameter:	Drilling depth:	Torque:
	H _{nom} (mm)	H _{nom,r} (mm)	HØ (mm)	Hd (mm)	T (max.) (Nm)
610 3 608	40	N/A	14	55	15,0
610 3 610	50	N/A	16	65	27,0
610 3 612	60	N/A	20	85	50,0
610 3 616	95	N/A	25	125	120,0



Walraven Anchors Design software

Discover which anchor is the best choice for any given application and load simply by entering the relevant details.

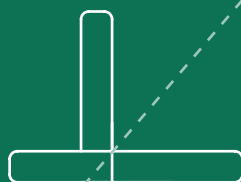
Register and download our calculation software:
walraven.com/anchors

WCA Ceiling Anchors

Installation +
Easy installation



Fire resistance
Suitable for fire resistance requirements



Quick
Perfect for overhead installation

Fixing +
No special tools needed



WCA1 Ceiling Anchors

Product overview

WCA1 Ceiling Anchors offer quick and easy installation. No special tools are required and the anchors have ETA certification. WCA1 Ceiling Anchors are suitable for applications requiring fire resistance and ideal for overhead applications, offering an outstanding performance in cracked as well as non-cracked concrete.



Multiple use

Material
Zinc Plated



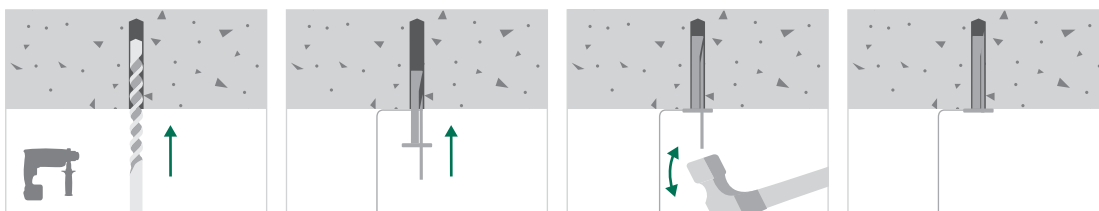
Features and benefits

- High performance in cracked and non-cracked concrete
- Quick and easy installation
- Product suitable for applications requiring fire resistance
- No special tools needed during installation
- Perfect for overhead applications

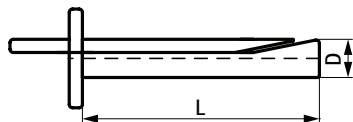
Substrate type

- Cracked Concrete
- Non-cracked Concrete

Installation guide



Product information



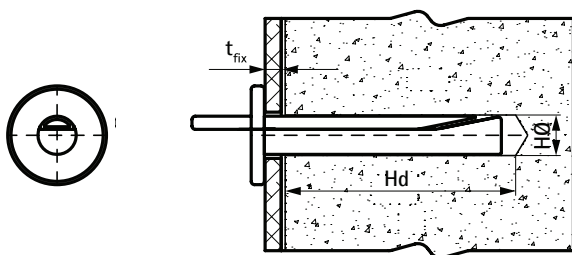
Part No.	Description	D (mm)	L (mm)	Box qty (pc)	Outer box qty (pc)
609 6 3604	WCA1 6x40	6	36	100	1600
609 6 3665	WCA1 6x65	6	65	100	800

Loads

Characteristic resistance value in:

Part No.	non-cracked concrete	cracked concrete	non-cracked concrete	cracked concrete	Partial safety factor
	V Rks Shear Load (kN)	V Rks Shear Load (kN)	N Rks Tension Load (kN)	N Rks Tension Load (kN)	
609 6 3604	3,00	3,00	3,00	3,00	1,4
609 6 3665	3,00	3,00	3,00	3,00	1,4

Installation data



Part No.	Setting depth:		Drill diameter:	Drilling depth:
	H _{nom} (mm)	H _{nom,r} (mm)	HØ (mm)	Hd (mm)
609 6 3604	N/A	N/A	6	40
609 6 3665	N/A	N/A	6	40

	Fixed element thickness:		Torque:
	T _{fix} (mm)		T (max.) (Nm)
609 6 3604		4.5	N/A
609 6 3665		35	N/A

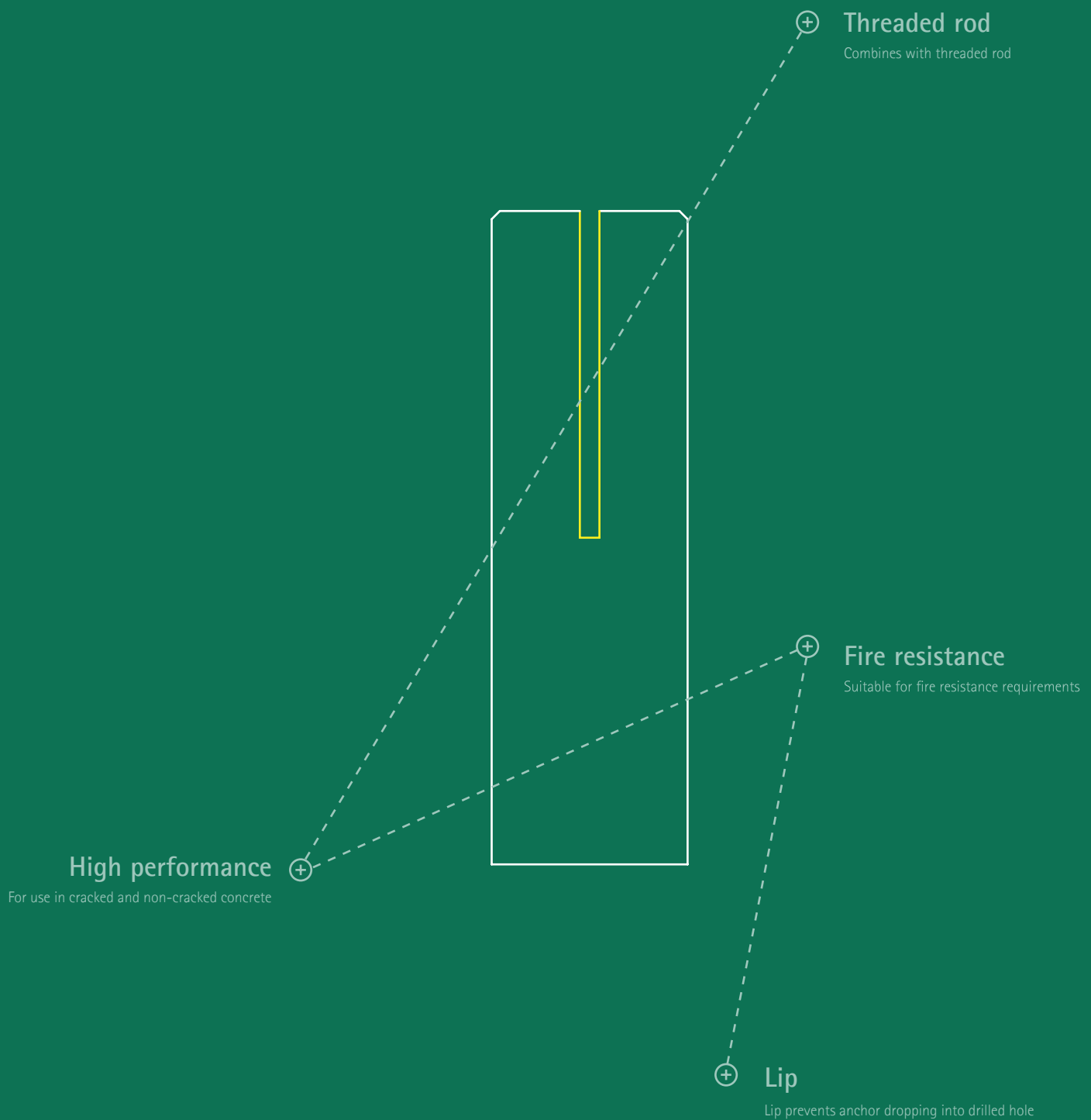
System approach

Our unique system approach, technical support and Walraven Anchor Design software help you find the ideal solution for every application and every load. What's more, Walraven is one of the very few companies providing ETA certification support. Visit our website to find out more.

walraven.com



WDI Drop in Anchors



WDI1 Drop-in Anchors

Product overview

WDI1 Drop in Anchors are available with various head types. These feature a slotted sleeve and internal wedge component that facilitates easy expansion. The anchors are easy to hammer in and their internal thread can be used with Walraven threaded rods or bolts. WDI1 Drop in anchors are suitable for applications requiring fire resistance. They are ideal for overhead usage, offering an outstanding performance in cracked as well as non-cracked concrete.



Multiple use



Fire resistance

Material

Zinc Plated



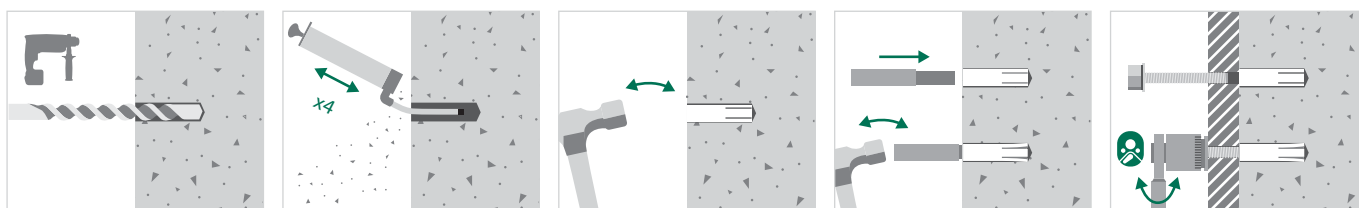
Features and benefits

- High performance in cracked and non-cracked concrete
- Product suitable for applications requiring fire resistance
- Internal thread to be used with Walraven threaded rod or bolt
- Easy to hammer in
- Slotted sleeve and internal wedge component facilitates easy expansion
- Suitable for fitting overhead installations

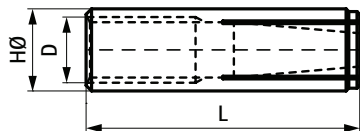
Substrate type

- Cracked Concrete
- Non-cracked Concrete

Installation guide



Product information

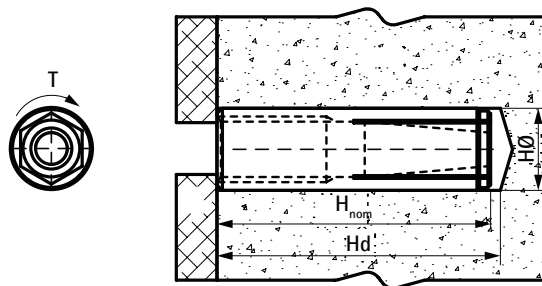


Part No.	Description	D (mm)	L (mm)	Box qty (pc)	Outer box qty (pc)
610 3 006	WDI1 6x25	6	25	100	2400
610 3 008	WDI1 8x30	8	30	100	600
610 3 010	WDI1 10x40	10	40	50	500
610 3 012	WDI1 12x50	12	50	50	300
610 3 016	WDI1 16x65	16	65	25	200

Loads

Part No.	Characteristic resistance value in:				Partial safety factor
	non-cracked concrete	cracked concrete	non-cracked concrete	cracked concrete	
	V Rks Shear Load (kN)	V Rks Shear Load (kN)	N Rks Tension Load (kN)	N Rks Tension Load (kN)	
610 3 006	1,52	1,52	1,52	1,52	2,1
610 3 008	3,01	3,01	3,01	3,01	2,1
610 3 010	4,60	4,60	4,60	4,60	2,1
610 3 012	6,40	6,40	6,40	6,40	2,1
610 3 016	13,30	13,30	13,30	13,30	2,1

Installation data



Part No.	Setting depth:	Drill diameter:	Drilling depth:	Torque:
	H _{nom} (mm)	HØ (mm)	H _d (mm)	T (max.) (Nm)
610 3 006	25	8	30	4,5
610 3 008	30	10	32	11,0
610 3 010	40	12	42	22,0
610 3 012	50	15	53	38,0
610 3 016	65	20	70	98,0

WDI1L Drop-in Anchors

Product overview

WDI1L Drop in Anchors are available with various head types. These feature a slotted sleeve and internal wedge component that facilitates easy expansion. The anchors are easy to hammer in and their internal thread can be used with Walraven threaded rods or bolts. WDI1L Drop in anchors are suitable for applications requiring fire resistance. They are ideal for overhead usage, offering an outstanding performance in cracked as well as non-cracked concrete.



Multiple use



Fire resistance

Material

Zinc Plated



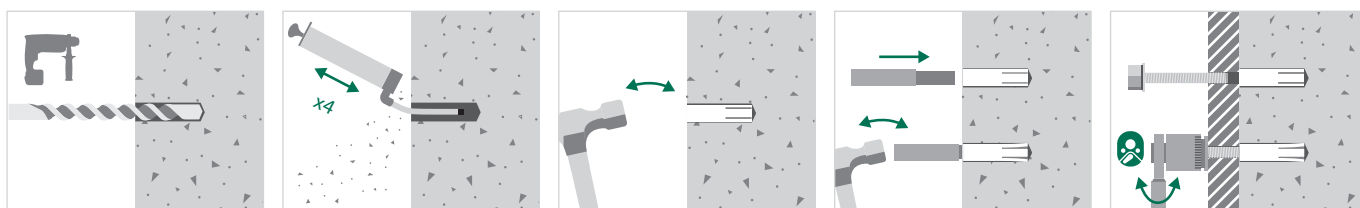
Features and benefits

- High performance in cracked and non-cracked concrete
- Product suitable for applications requiring fire resistance
- Internal thread to be used with Walraven threaded rod or bolt
- Lip prevents anchor dropping into drilled hole
- Slotted sleeve and internal wedge component facilitates easy expansion
- Suitable for fitting overhead installations

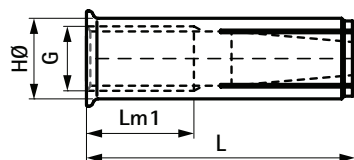
Substrate type

- Cracked Concrete
- Non-cracked Concrete

Installation guide



Product information

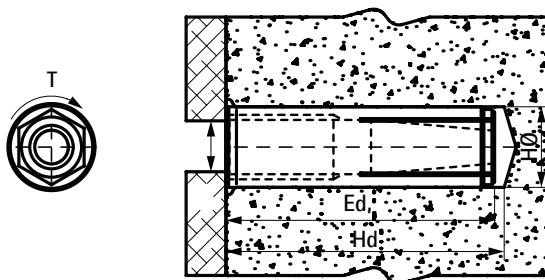


Part No.	Description	D (mm)	L (mm)	Box qty (pc)	Outer box qty (pc)
610 3 106	WDI1L 6x25	6	25	100	600
610 3 108	WDI1L 8x30	8	30	100	600
610 3 110	WDI1L 10x40	10	40	50	500
610 3 112	WDI1L 12x50	12	50	50	300
610 3 116	WDI1L 16x65	16	65	25	150

Loads

Part No.	Characteristic resistance value in:				
	non-cracked concrete	cracked concrete	non-cracked concrete	cracked concrete	Partial safety factor
	V Rks Shear Load (kN)	V Rks Shear Load (kN)	N Rks Tension Load (kN)	N Rks Tension Load (kN)	
610 3 106	1,52	1,52	1,52	1,52	2,1
610 3 108	3,01	3,01	3,01	3,01	2,1
610 3 110	4,60	4,60	4,60	4,60	2,1
610 3 112	6,40	6,40	6,40	6,40	2,1
610 3 116	13,30	13,30	13,30	13,30	2,1

Installation data



Part No.	Setting depth:	Drill diameter:	Drilling depth:	Torque:
	H _{nom} (mm)	HØ (mm)	Hd (mm)	T (max.) (Nm)
610 3 106	25	8	30	4,5
610 3 108	30	10	32	11,0
610 3 110	40	12	42	22,0
610 3 112	50	15	53	38,0
610 3 116	65	20	70	98,0

WDI1 SSt Drop-in Anchors

Product overview

WDI1 SSt Drop in Anchors are made of stainless steel and available with various head types. These feature a slotted sleeve and internal wedge component that facilitates easy expansion. The anchors are easy to hammer in and their internal thread can be used with Walraven's threaded rod or bolt.

WDI1 SSt Drop in anchors are suitable for applications requiring fire resistance. They are ideal for overhead usage, offering an outstanding performance in cracked as well as non-cracked concrete.



Multiple use



Fire resistance

Material

Stainless Steel



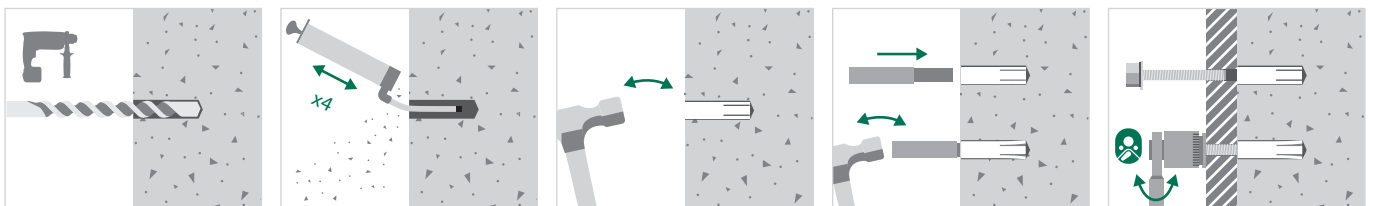
Features and benefits

- High performance in cracked and non-cracked concrete
- Product recommended for applications requiring fire resistance
- Internal thread to be used with Walraven threaded rod or bolt
- Corrosion resistant stainless steel
- Slotted sleeve and internal wedge component facilitates easy expansion
- Suitable for fitting overhead installations

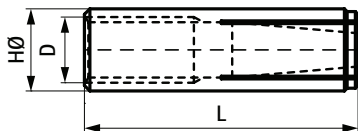
Substrate type

- Cracked Concrete
- Non-cracked Concrete

Installation guide



Product information

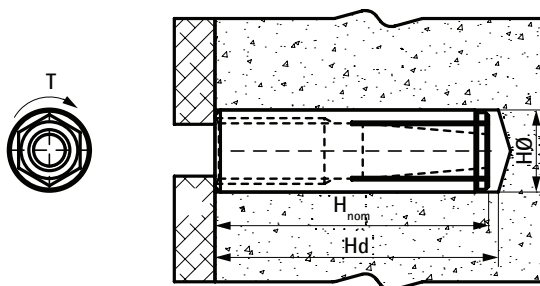


Part No.	Description	D (mm)	L (mm)	Box qty (pc)	Outer box qty (pc)
610 3 708	WDI1 SSt 8x30	8	30	100	600
610 3 710	WDI1 SSt 10x40	10	40	50	500
610 3 712	WDI1 SSt 12x50	12	50	50	300
610 3 716	WDI1 SSt 16x65	16	65	25	200

Loads

Part No.	Characteristic resistance value in:				Partial safety factor
	non-cracked concrete	cracked concrete	non-cracked concrete	cracked concrete	
	V Rks Shear Load (kN)	V Rks Shear Load (kN)	N Rks Tension Load (kN)	N Rks Tension Load (kN)	
610 3 708	2,00	2,00	2,00	2,00	2,1
610 3 710	3,20	3,20	3,20	3,20	2,1
610 3 712	4,60	4,60	4,60	4,60	2,1
610 3 716	8,30	8,30	8,30	8,30	2,1

Installation data



Part No.	Setting depth:	Drill diameter:	Drilling depth:	Torque:
	H _{nom} (mm)	HØ (mm)	Hd (mm)	T (max.) (Nm)
610 3 708	30	10	32	4.5
610 3 710	40	12	42	11.0
610 3 712	50	15	53	22.0
610 3 716	65	20	70	38.0



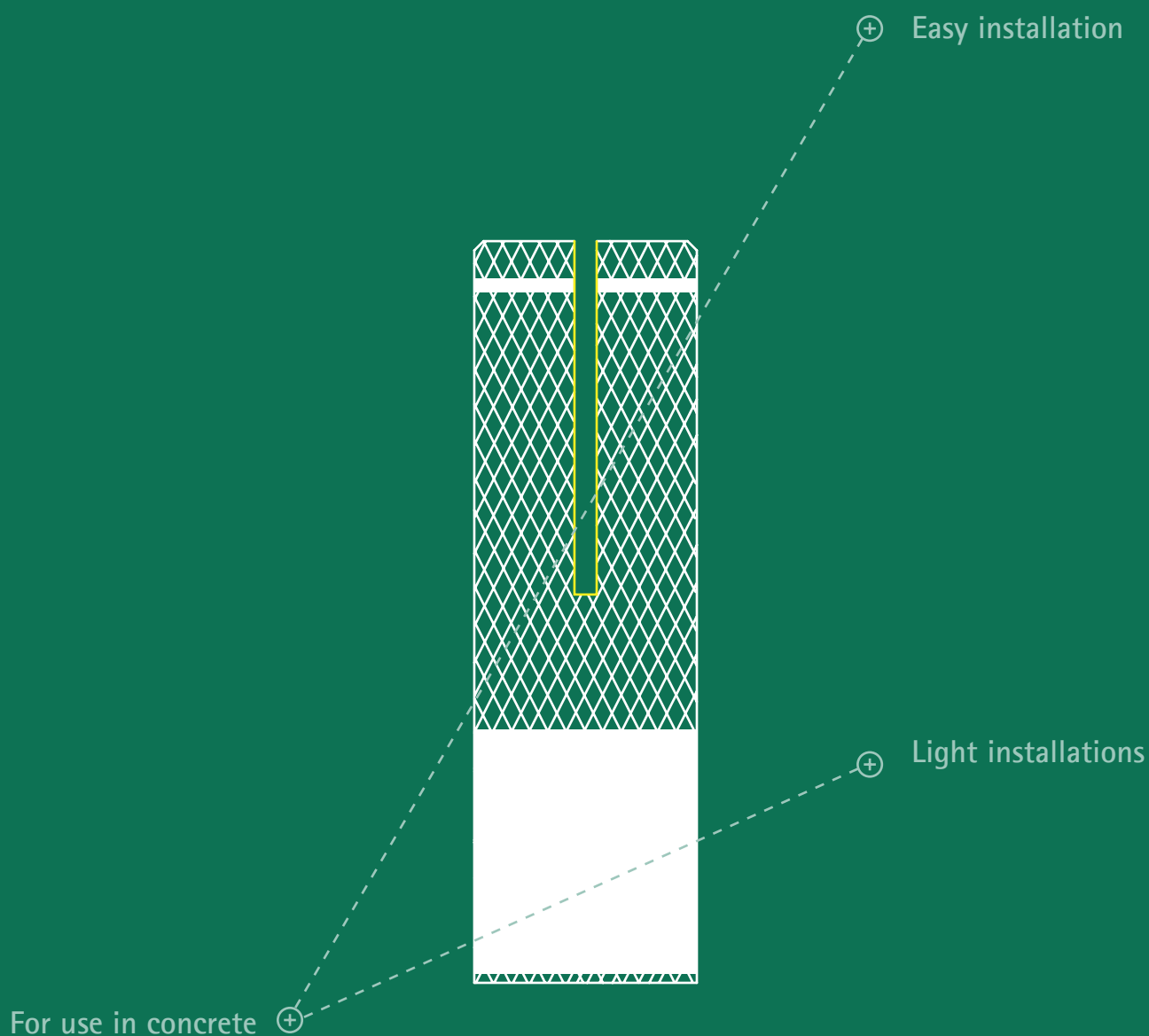
Customer support

Whatever your needs, Walraven can provide a solution. Our product and sales experts are ready to help, and have up-to-date local knowledge and expertise. Want to know more about how we can support? Get in touch today!

walraven.com



WBA Brass Anchors



WBA Brass Anchors

Product overview

WBA Brass Anchors have been extremely popular with installers for decades, as they provide a cost-effective, durable solution for a wide range of applications.

WBA Brass Anchors can be used in a wide variety of non-industrial fixing applications. They offer a short installation depth, so there is no need to drill deeply. In addition, the surface of the anchor prevents rotation in the drilled hole.

Material

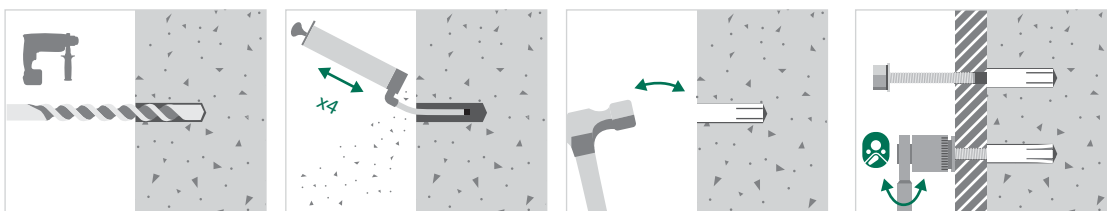
Brass

Features and benefits

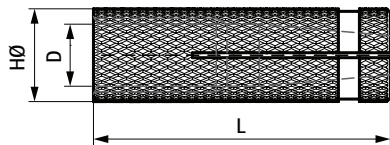
- Surface of the anchor prevents rotation in the drilled hole
- Short installation depth reduces the drilling depth



Installation guide

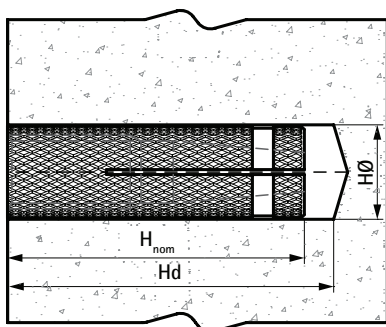


Product information



Part No.	Description	D (mm)	L (mm)	Box qty (pc)	Outer box qty (pc)
610 7 006	WBA 6x22	6	22	100	1600
610 7 008	WBA 8x30	8	30	100	1600
610 7 010	WBA 10x32	10	32	100	800
610 7 012	WBA 12x38	12	38	50	400

Installation data

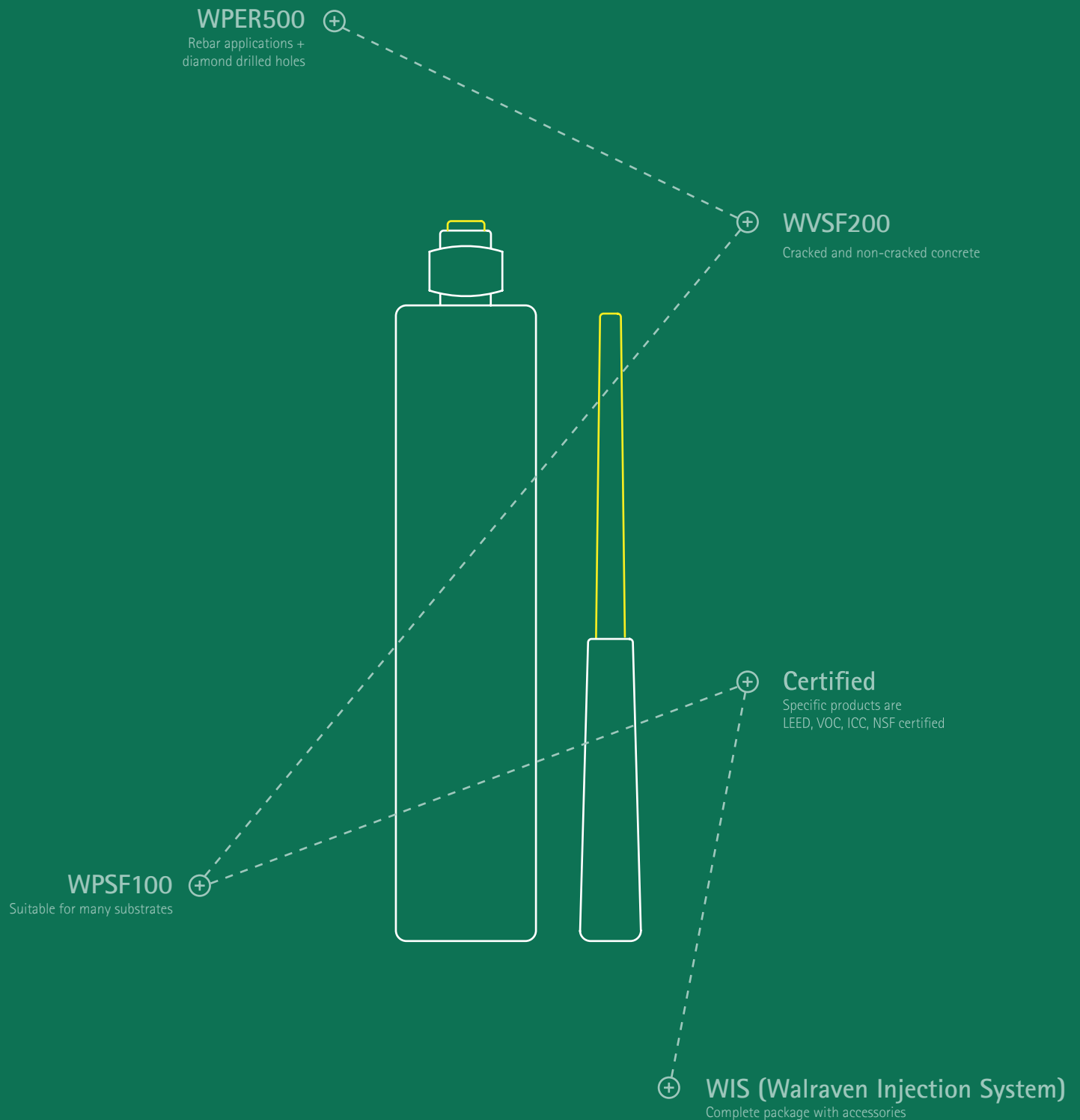


Part No.	Setting depth:	Drill diameter:	Drilling depth:	Torque:
	H _{nom} (mm)	HØ (mm)	H _d (mm)	T (max.) (Nm)
610 7 006	22	8	25	N/A
610 7 008	30	10	32	N/A
610 7 010	32	12	35	N/A
610 7 012	38	15	45	N/A

Chemical Anchors



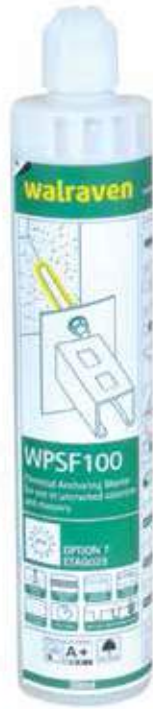
WIS Chemical Anchors



WPSF100 Chemical Anchors

Product overview

WPSF100 Chemical Anchor is a polyester solution, which comes with LEED and VOC Certification. WPSF100 Chemical Anchor can be used with many different types of substrate in dry, wet and flooded holes without performance loss. It is ideal for medium tension loads and for wall mounting of Walraven Injection Systems (WIS).



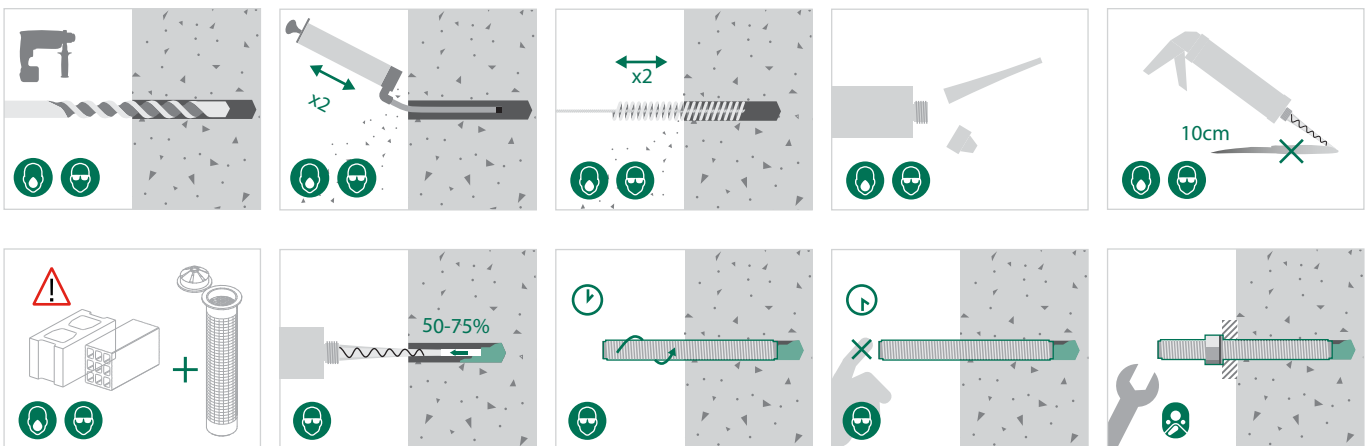
Features and benefits

- Suitable for many substrates
- Installation in flooded holes without performance loss
- Ideal for wall mounting of Walraven installation systems
- LEED, VOC Certificates
- High performance in non-cracked concrete

Substrate type

- Non-cracked Concrete
- Masonry
- Rock
- Stone
- Hollow Block

Installation guide



Product information

Product code	Description	Content	Box qty (pc)	Related dispenser gun
609 9 113	WPSF100	300 ml	12	609 9 986

Loads

Combined pull-out and concrete cone failure in non-cracked concrete C20/25

Dimension		M8	M10	M12	M16	M20	M24
Characteristics bond resistance in non-cracked concrete							
Dry and wet concrete	τ_{Rk} [N/mm ²]	8,5	8	9	9	8	7,5
Flooded hole	τ_{Rk} [N/mm ²]	8,5	8	9	9	8	7,5
Partial safety factor	$\gamma_{Mc^{(1)}}$ [-]	1,8	1,8	1,8	1,8	1,8	1,8

For more details see ETA

Installation data

Threaded Rod WIS TR	HØ (mm)	Brush Ø (mm)	T (max.) (Nm)	H _{nom,r2} (mm)	H _{nom} (mm)
M8	10	14	10	64	96
M10	12	14	20	80	120
M12	14	20	40	96	144
M16	18	20	80	128	192

Temperature (°C)	Installation Time (min)	Curing Time (min)
5	18	145
5 - 10	10	145
10 - 20	6	85
20 - 25	5	50
25 - 30	4	35

Processing time refers to the highest temperature in the range. Load time refers to the lowest temperature in the range.
Cartridge must be conditioned to a minimum of +5 °C.

WVSF200 Chemical Anchors

Product overview

WVSF200 Chemical Anchor is a vinylester solution, which comes with LEED, WRAS and VOC Certification. WVSF200 Chemical Anchor is recommended for rebar applications, approved for applications requiring seismic resistance and fire resistance and is suitable for fitting overhead and wall installations. It offers an extremely good performance in cracked and non-cracked concrete.



Fire resistance
F120



Seismic
C1



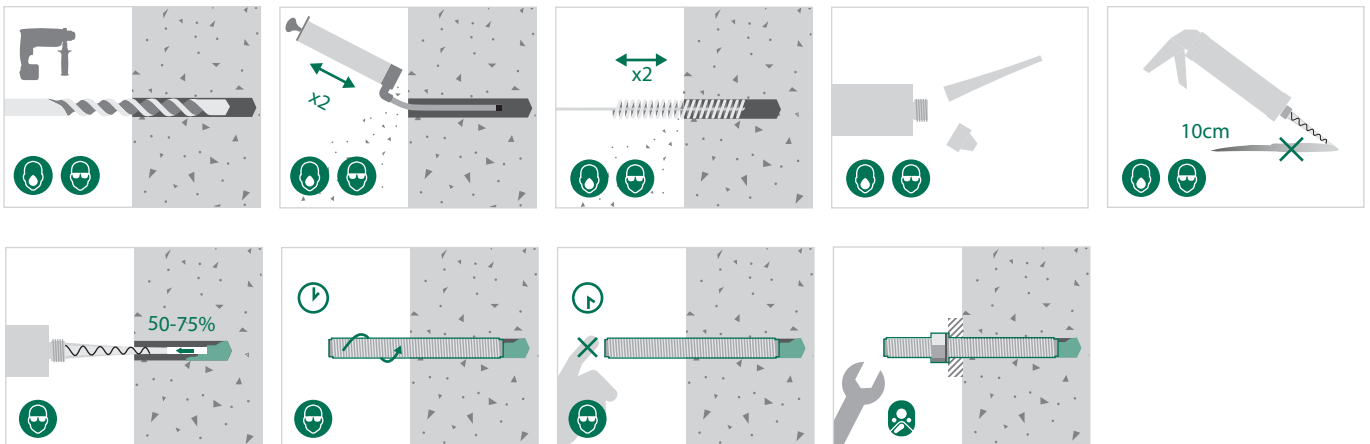
Features and benefits

- High performance in cracked and non-cracked concrete
- Recommended for rebar applications
- Approved for applications requiring seismic resistance
- Product suitable for applications requiring fire resistance
- Suitable for fitting overhead and wall installations
- LEED, WRAS, VOC Certificates

Substrate type

- Cracked Concrete
- Non-cracked Concrete

Installation guide



Product information

Product code	Description	Content	Box qty (pc)	Related dispenser gun
609 9 123	WVSF200	300	12	609 9 986
609 9 124	WVSF200	345 (side by side)	12	609 9 987
609 9 125	WVSF200	410 (coaxial)	12	609 9 988
609 9 126	WVSF200W (winter version)	300	12	609 9 986
609 9 127	WVSF200T (tropical version)	300	12	609 9 986

Loads

Combined pull-out and concrete cone failure in non-cracked concrete C20/25

Dimension		M8	M10	M12	M16	M20	M24	M27	M30
Characteristics bond resistance in non-cracked concrete									
Dry and wet concrete	τ_{Rk} [N/mm ²]	10	9,5	9,5	9	8,5	8	6,5	5,5
Partial safety factor	$\gamma_{Mc^{(1)}}$ [-]	1,8	1,8	1,8	1,8	1,8	1,8	2,1	2,1
Flooded hole	τ_{Rk} [N/mm ²]	8,5	7,5	7	7	6,5	5,5	N/A	N/A
Partial safety factor	$\gamma_{Mc^{(1)}}$ [-]	2,1	2,1	2,1	2,1	2,1	2,1	2,1	2,1

Combined pull-out and concrete cone failure in cracked concrete C20/25

Size		M8	M10	M12	M16	M20
Characteristics bond resistance in cracked concrete						
Dry and wet concrete	τ_{Rk} [N/mm ²]	4,5	4,5	4,5	4	4
Partial safety factor	$\gamma_{Mc^{(1)}}$ [-]	1,8	1,8	1,8	1,8	1,8
Flooded hole	τ_{Rk} [N/mm ²]	4,5	4,5	4,5	4	4
Partial safety factor	$\gamma_{Mc^{(1)}}$ [-]	2,1	2,1	2,1	2,1	2,1

For more details see ETA

Installation data

Threaded Rod WIS TR	HØ (mm)	Brush Ø (mm)	T (max.) (Nm)	H _{nom,r2} (mm)	H _{nom} (mm)
M8	10	14	10	64	160
M10	12	14	20	80	200
M12	14	20	40	96	240
M16	18	20	80	128	320

Temperature (°C)			Installation Time (min)			Curing Time (min)		
WVSF200	WVSF200W	WVSF200T	WVSF200	WVSF200W	WVSF200T	WVSF200	WVSF200W	WVSF200T
5 - 10	-10 - -5	15 - 20	10	50	15	145	720	300
10 - 15	-5 - 0	20 - 25	8	15	10	85	100	145
15 - 20	0 - 5	25 - 30	6	10	7,5	75	75	85
20 - 25	5 - 20	30 - 35	5	5	5	50	50	50
25 - 30	20	35 - 40	4	100 ^{sec}	3,5	40	20	40

Processing time refers to the highest temperature in the range. Load time refers to the lowest temperature in the range.
Cartridge must be conditioned to a minimum of +5 °C.

WPER500 Chemical Anchors

Product overview

WPER500 Chemical Anchor is an epoxy solution, which comes with LEED, VOC, ICC and NSF certification. WPER500 Chemical Anchor is recommended for rebar applications and diamond drilled holes, approved for applications requiring seismic resistance and fire resistance and is suitable for fitting overhead and wall installations. It offers an extremely good performance in cracked and non-cracked concrete.



Fire resistance
F240



Seismic
C2



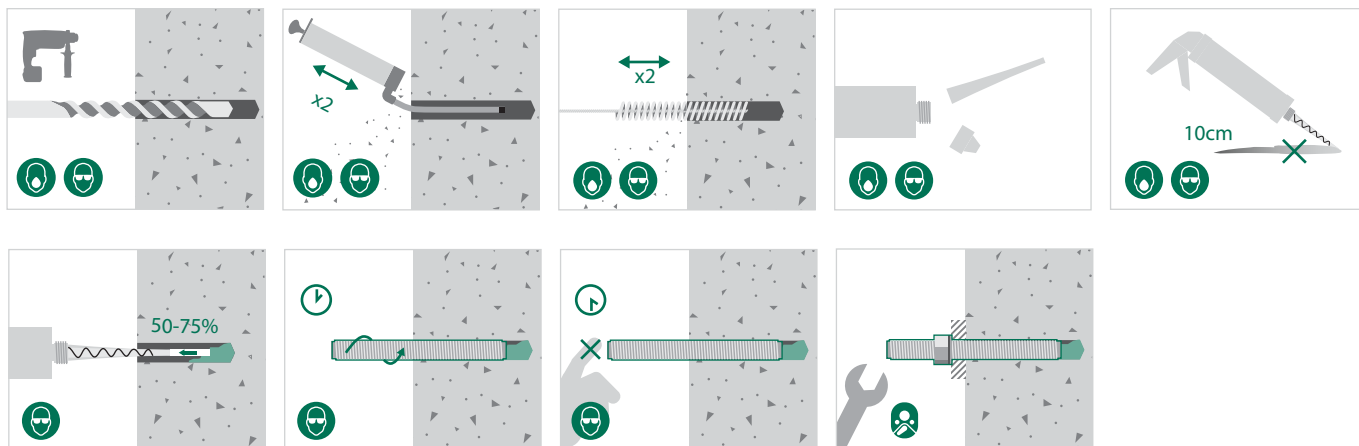
Features and benefits

- Very High performance in cracked and non-cracked concrete
- Recommended for rebar applications and diamond drilled holes
- Approved for applications requiring seismic resistance
- Product suitable for applications requiring fire resistance
- Suitable for fitting overhead and wall installations fire resistance
- LEED, VOC, ICC, NSF Certificates

Substrate type

- Cracked Concrete
- Non-cracked Concrete

Installation guide



Product information

Product code	Description	Content	Box qty (pc)	Related dispenser gun
609 9 154	WPER500	385 (side by side)	12	609 9 989
609 9 156	WPER500	585 (side by side)	12	609 9 989

Loads

Combined pull-out and concrete cone failure

Dimension				M8	M10	M12	M16	M20	M24	M27	M30
Characteristics bond resistance in non-cracked concrete C20/25											
Temp. range I: 40°C/24°C	Dry and wet concrete	$\tau_{Rk,ucr}$	[N/mm ²]	15	15	15	14	13	12	12	12
Temp. range I: 40°C/24°C	Flooded bore hole	$\tau_{Rk,ucr}$	[-]	15	14	13	10	9,5	8,5	7,5	7,0
Installation safety factor (dry and wet concrete)		γ^2		1,2	1,2	1,2	1,2	9,5	8,5	7,5	7,0
Installation safety factor (flooded bore hole)		γ^2		1,4	1,4	1,4	1,4	1,4	1,4	1,4	1,4

Dimension				M12	M16	M20	M24	M27	M30
Characteristics bond resistance in cracked concrete C20/25									
Temp. range I: 40°C/24°C	Dry and wet concrete	$\tau_{Rk,cr}$	[N/mm ²]	7,5	6,5	6,0	5,5	5,5	5,5
Temp. range I: 40°C/24°C	Dry and wet concrete	$\tau_{Rk,seis,C1}$	[N/mm ²]	7,1	6,2	5,7	5,5	5,5	5,5
Temp. range I: 40°C/24°C	Dry and wet concrete	$\tau_{Rk,seis,C2}$	[N/mm ²]	2,4	2,2	N/A	N/A	N/A	N/A
Temp. range I: 40°C/24°C	Flooded bore hole	$\tau_{Rk,ucr}$	[N/mm ²]	7,5	6,0	5,0	4,5	4,0	4,0
Temp. range I: 40°C/24°C	Flooded bore hole	$\tau_{Rk,seis,C1}$	[N/mm ²]	7,1	5,8	4,8	4,5	4,0	4,0
Temp. range I: 40°C/24°C	Flooded bore hole	$\tau_{Rk,seis,C2}$	[N/mm ²]	2,4	2,1	N/A	N/A	N/A	N/A
Installation safety factor (dry and wet concrete)		γ^2		1,2	1,2	1,4	1,4	1,4	1,4
Installation safety factor (flooded bore hole)		γ^2		1,4	1,4	1,4	1,4	1,4	1,4

For more details see ETA

Installation data

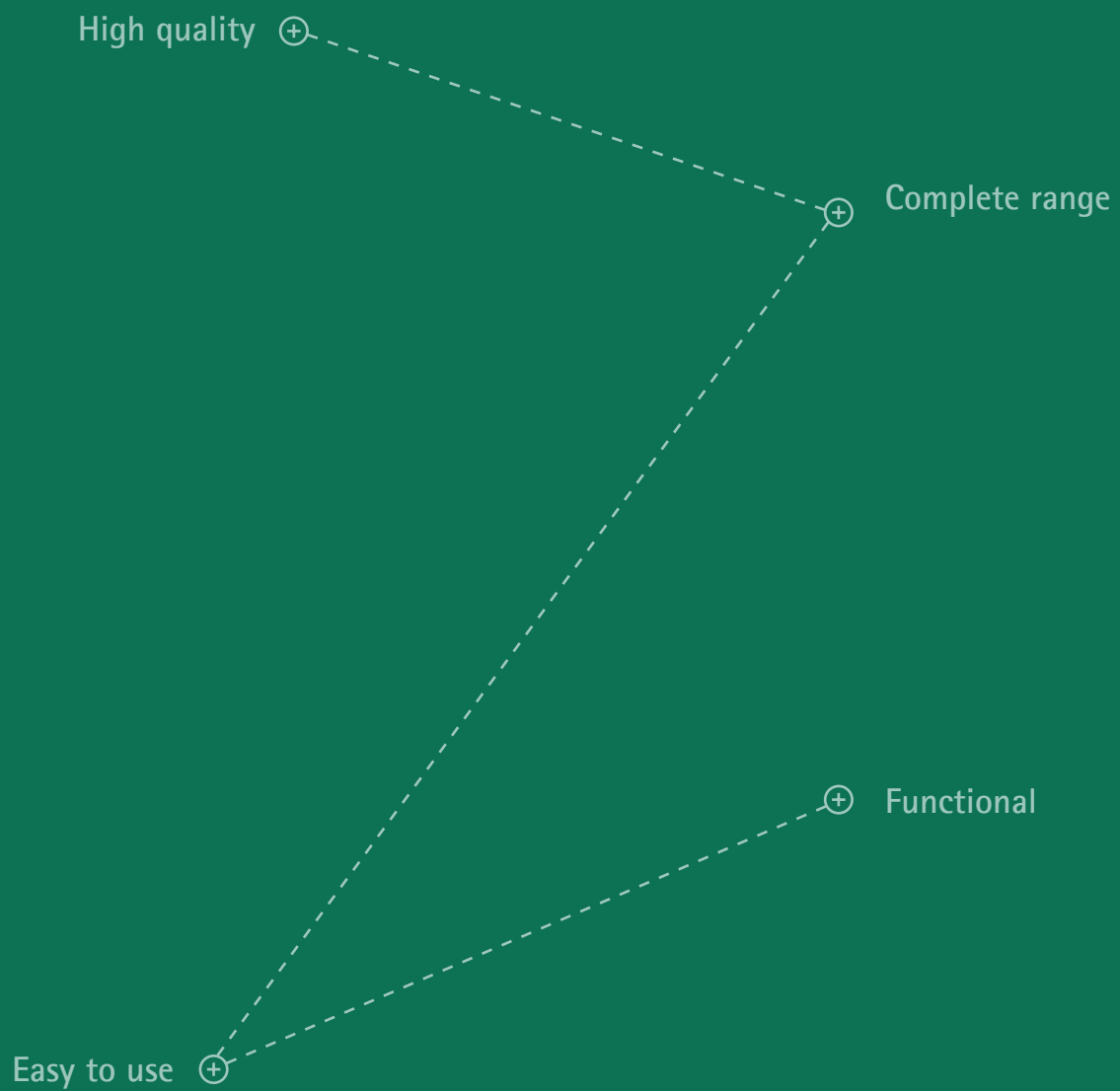
Threaded Rod WIS TR	HØ (mm)	Brush Ø (mm)	T (max.) (Nm)	H _{nom,r2} (mm)	H _{nom} (mm)
M8	10	12	10	60	96
M10	12	14	20	60	120
M12	14	16	40	70	144
M16	18	20	80	80	192

Temperature (°C)	Installation Time (min)	Curing Time (h)
5	120	50
10	90	30
20	30	10
30	20	6
40	12	4

Processing time refers to the highest temperature in the range. Load time refers to the lowest temperature in the range.
Cartridge must be conditioned to a minimum of +5 °C.



Accessories



Accessories

WIS Threaded rods BUP



Material
Zinc plated with
zinc flake

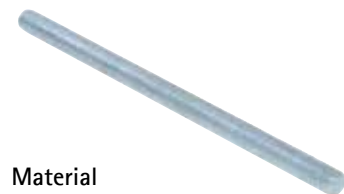


Features and benefits

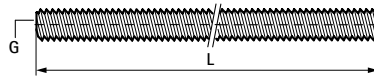
- According to DIN 976-1
- Surface protection: product is part of the UltraProtect® 1000 system
- Suitable for in- and outdoor applications stands min. 1,000 hours salt spray test, (max. 5% red rust) according to ISO 9227

Part No.	Description	G	L (m)	HØ (mm)	T (max.) (Nm)	Bundle (pc)	Outer box qty (pc)
630 8 1008	WIS BUP M8x1000	M8	1	10	10	50	N/A
630 8 1010	WIS BUP M10x1000	M10	1	12	20	25	N/A
630 8 1012	WIS BUP M12x1000	M12	1	14	40	20	N/A
630 8 1016	WIS BUP M16x1000	M16	1	18	80	20	N/A

WIS Threaded Rod



Material
Zinc plated 8.8



Features and benefits

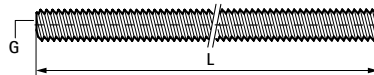
- High safe load performance when used in combination with Diamond Walraven chemical anchors
- 60 degree thread angle optimises performance
- According to DIN 976-1
- Material: steel, strength class 8.8

Part No.	Description	G	L (m)	HØ (mm)	T (max.) (Nm)	Bundle (pc)	Outer box qty (pc)
630 3 9108	WIS TR M8x1000	M8	1	10	10.0	50	N/A
630 3 9110	WIS TR M10x1000	M10	1	12	20.0	25	N/A
630 3 9112	WIS TR M12x1000	M12	1	14	40.0	20	N/A
630 3 9116	WIS TR M16x1000	M16	1	18	80.0	10	N/A

WIS Threaded Rod SSSt A4



Material
Stainless steel A4



Features and benefits

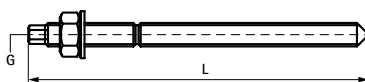
- High safe load performance when using in combination with Diamond Walraven chemical anchors
- 60 degree thread angle optimises performance
- According to DIN 976-1

Part No.	Description	G	L (m)	HØ (mm)	T (max.) (Nm)	Bundle (pc)	Outer box qty (pc)
630 7 9108	WIS TR SSSt M8x1000	M8	1	10	10,0	50	N/A
630 7 9110	WIS TR SSSt M10x1000	M10	1	12	20,0	25	N/A
630 7 9112	WIS TR SSSt M12x1000	M12	1	14	40,0	20	N/A
630 7 9116	WIS TR SSSt M16x1000	M16	1	18	80,0	10	N/A

WIS Stud bolt



Material
Zinc Plated 5.8



Features and benefits

- High safe load performance when using in combination with Diamond Walraven chemical anchors
- Flat head and pre-assembled nut and washer for faster installation

Part No.	Description	G	L (m)	SW1	Box qty (pc)	Outer box qty (pc)
609 9 0811	WIS SB M8x110	M8	110	13	10	160
609 9 1013	WIS SB M10x130	M10	130	17	10	160
609 9 1016	WIS SB M10x170	M10	170	17	10	80
609 9 1219	WIS SB M12x190	M12	190	19	10	80
609 9 1622	WIS SB M16x220	M16	220	24	10	80

Installation data

Part No.	Drill diameter:	Drilling depth:		Fixed element thickness:		Torque:
	HØ (mm)	Hd (mm)	Hdr2 (mm)	T _{fix} (mm)	T _{fix,r} (mm)	T (max.) (Nm)
609 9 0811	10	100	80	20	40	10.0
609 9 1013	12	112	92	28	48	20.0
609 9 1016	12	112	92	68	88	20.0
609 9 1219	14	165	135	35	65	40.0
609 9 1622	18	154	129	76	101	80.0

Dispenser Gun



Features and benefits

- Best 26:1 thrust ratio
- No free-play
- Thick 5mm chamfered plate with rubber pads
- Metal trigger (not aluminum)
- Metal piston pushers except for 380ml gun
- Metal back-plate

Part No.	Description	Box qty (pc)	Outer box qty (pc)
609 9 986	WIS DG 300ml	1	N/A
609 9 987	WIS DG 345ml (side by side)	1	N/A
609 9 988	WIS DG 410ml coaxial	1	N/A
609 9 989	WIS DG 385 & 585ml (side by side)	1	N/A

Accessories

WIS Standard Nozzle

Features and benefits



- Always correct mixing
- 12 mixing elements

Part No.	Description	Box qty (pc)	Outer box qty (pc)
609 9 990	WIS NZZL S	12	N/A

WIS Epoxy Nozzle

Features and benefits



- Always correct mixing
- Special advanced mixing elements

Part No.	Description	Box qty (pc)	Outer box qty (pc)
609 9 991	WIS NZZL S	12	N/A

WIS Extension Pipe 185 mm

Features and benefits



- Fits standard and epoxy nozzles

Part No.	Description	Dimension (mm)	Box qty (pc)	Outer box qty (pc)
609 9 992	WIS EP	185	12	N/A

WIS Brush



Features and benefits

- Single brush for M8 & M10 hole
- Part of the ETA-approved system
- Ensures correct cleaning according to the defined number of brushes
- Optimal cleaning performance
- Hybrid brush (steel and natural bristle)

Part No.	Description	Box qty (pc)	Outer box qty (pc)
609 9 980	WIS BR M8/10	1	N/A
609 9 981	WIS BR M12/16	1	N/A
609 9 982	WIS BR M20/24	1	N/A

WIS Blowpump



Features and benefits

- Part of the ETA-approved system
- Ensures correct cleaning according to the defined number of blows
- Optimal cleaning performance

Part No.	Description	Box qty (pc)	Outer box qty (pc)
609 9 985	WIS BP	1	N/A

WIS Plastic Sleeve



Features and benefits

- Sleeve for M8, M10, M12 and M16 threaded bar
- Special cap prevents leaking during overhead application

Part No.	Description	Dimension (mm)	HØ (mm)	Box qty (pc)	Outer box qty (pc)
609 7 017	WIS PS 16x85	85	M8, M10, M12	10	N/A
609 7 018	WIS PS 16x130	130	M8, M10, M12	10	N/A
609 7 020	WIS PS 20x85	85	M12, M16	10	N/A

Accessories

WDI1 Setting Tool



Features and benefits

- Hand protection grip ensures safe work
- Suitable for fitting Diamond Walraven WDI1 drop in anchors

Part No.	Description	Dimension (mm)	Box qty (pc)	Outer box qty (pc)
690 2 106	WDI1ST 6	6	1	40
690 2 108	WDI1ST 8	8	1	40
690 2 110	WDI1ST 10	10	1	40
690 2 112	WDI1ST 12	12	1	40
690 2 116	WDI1ST 16	16	1	40

SDS+ Drill Hollow Blocks



Features and benefits

- Designed for drilling in hollow materials
- Deep drilling possible thanks to drill construction
- Quick drilling without material damage
- Drill design ensures straight holes with no need for hammer drilling
- Ideal for fitting Walraven WPSF chemical anchors in hollow materials
- Perfectly round hole

Part No.	Description	Dimension (mm)	L (mm)	Box qty (pc)	Outer box qty (pc)
695 3 0826	WSDS+8x260/HB	8	260	1	100
695 3 1026	WSDS+10x260/HB	10	260	1	100
695 3 1226	WSDS+12x260/HB	12	260	1	100
695 3 1626	WSDS+16x260/HB	16	260	1	80

SDS+ Drill with 3 Cutting Edges for Concrete



Features and benefits

- 3 cutting edges increase drilling speed and goes through rebar without getting stuck
- Tip inserted in the body of the drill bit for more protection and higher life expectancy
- Drill design ensures easy removal of dust and less overheating
- Special aiming tip allows precise and quick start up of drilling
- Ideal for fitting Diamond Walraven WVSF & WPER chemical anchors
- Perfectly round hole

Part No.	Description	Dimension (mm)	L (mm)	Box qty (pc)	Outer box qty (pc)
695 2 0611	WSDS+6x110/3CE	110	110	1	250
695 2 0616	WSDS+6x160/3CE	160	160	1	200
695 2 0621	WSDS+6x210/3CE	210	210	1	150
695 2 0816	WSDS+8x160/3CE	160	160	1	200
695 2 0821	WSDS+8x210/3CE	210	210	1	150
695 2 1021	WSDS+10x210/3CE	210	210	1	100
695 2 1026	WSDS+10x260/3CE	260	260	1	100
695 2 1216	WSDS+12x160/3CE	160	160	1	150
695 2 1221	WSDS+12x210/3CE	210	210	1	100
695 2 1226	WSDS+12x260/3CE	260	260	1	100
695 2 1621	WSDS+16x210/3CE	210	210	1	100
695 2 1626	WSDS+16x260/3CE	260	260	1	100

Drill with Stopper for Concrete



Features and benefits

- Control of drilling depth thanks to special depth stopper
- Optimal removal of dust and less overheating thanks to progressive flute
- 3 cutting edges increase drilling speed
- Special aiming tip allows precise and quick start up of drilling
- Ideal for fitting Diamond Walraven WDI anchors in overhead applications
- Perfectly round hole

Part No.	Description	Dimension (mm)	L (mm)	Drilling depth (mm)	Box qty (pc)	Outer box qty (pc)	Relates to
695 1 010	WSDS+10x110/S	10	110	32	1	150	WDI1 8
695 1 012	WSDS+12x130/S	12	130	42	1	150	WDI1 10

Notes

Notes

Middle East

UAE

Abu Dhabi
Dubai
Ras Al Khaima

SAUDI ARABIA

Al Khobar
Jeddah
Riyadh

Oman

Hira & Partners Llc

Qatar

Hira LLC

Other countries

India

Srilanka

Nigeria

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