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ABOUT NEXUS

Nexus is a privately owned company specialising in a wide range of innovative fixing solutions along with bespoke products tailored to the customers’ needs. We aim to become a worldwide partner to construction professionals, dedicated to the highest

quality of both products and service. On the cutting edge of the fixing and fastening technology, Nexus is committed to research and development and focuses on continuous innovation to ensure competitive longevity.

MAKE THE CONNECTION

NEXUS TECHNICAL INFORMATION

With this technical guide Nexus are providing the current available technical information relating to our range of high performance anchors.

There are many influencing factors that can determine the correct choice of a suitable fixing or anchor that will perform to the expectations of the designer and client alike.

The scope of this guide is to point the user in the right direction so that they can choose, one or possibly two options of anchor for their particular application knowing that they have, in doing so, avoided any future possible problems that could occur during the selection process (see product selection), such as

incorrect finish of anchor, insufficient fixing thickness and so forth.

Nexus are confident that as with all engineered solutions, by choosing one of our products you have made the correct decision and at the same time have the reassurance that your choice can be backed up by suitable technical information where possible. If required site testing is also available to further ensure the quality of our products and services.

Nevertheless, we always recommend, that should for what ever reason, there be any doubt about the type and installation that you are considering, to each time engage the services of a suitable qualified engineer.

PRODUCT SELECTION

The process of making the correct choice has many influencing factors that need to be considered when thinking about what will be the correct Nexus product to carry out a successful installation.

In order to assist and guide either the novice or, individual who is familiar with designing and installing anchors and fixings, we have provided the following guidelines to assist and hopefully enable you to have an improved understanding of what these influencing factors are and how they effect your decision for the correct Nexus product.



BASE MATERIAL (SUBSTRATE)

The material into which the fixing will be made.

Fixing function or mechanism (anchor type)
The way in which a fixing operates during installation and retains its position in base material after installation has been carried out.

INSTALLATION

Selecting the correct anchor by the way in which it is installed and associated practical considerations.

CORROSION AND FINISH

Specifying the type of finish of the fixing.

LOADS

Understanding the forces that act upon the fixing and how that influences the performance of the product in the base material.

FIRE

How to consider the effects of fire regarding fixings and the current levels of information available.

SITE TESTING

Where no test information is available, or a certain products performance needs to be verified, then a site test can be conducted to confirm the products performance.

TERMINOLOGY/NOMENCLATURE

What are the terms used to describe the anchor characteristics or other associate information.

DRILLING

To ensure that the fixing works and performs as required, the correct drilling of the hole is also necessary. This means that a suitable drill and machine (power tool) are used for the installation.

BASE MATERIAL (SUBSTRATE)

Undoubtedly, the most incorrectly referred when making a choice to is the description of the base material or substrate. The exception tends to be concrete, although there are also many types of concrete, self compacting or PFA and no-fines concretes.

To make this easier to understand we have put the base materials into groups as they directly effect the selection of correct fixings.

MASONRY

Brick, Block or Stone; these can also be subdivided into being either hollow or solid and all have various compressive strengths.

BRICKWORK

In the UK alone there are over five thousand types of brick and they in turn can be either solid or hollow. It may also be difficult, in particular with older buildings to determine on the inside walls for example what kind of material either brick or block has been used, as the walls are normally plastered. In this case a small pilot hole can be drilled to establish the composition of the wall.

BLOCKWORK

Developed originally to (depending upon the size) act as a larger unit than a brick, usually equivalent to four bricks and used for internal walls only. The original material was, and is still in use is the waste material (coke/ash) from a fossil fired power stations. Sometimes known as a "Breeze Block", a low strength, weal structured material.

Since then the early days of block production methods have greatly improved and therefore the quality of the blocks themselves.

Today there are concrete solid and hollow blocks, hollow blocks (perforated terra cotta type), aircrete a cellular light weight block with high insulation qualities, but virtually impossible to use a convention expansion steel or plastic anchor.

Generally, bricks have a reasonable compressive strength which means that anchoring is not a problem. However, when hollow or having perforations this can greater effect the performance.

As a general rule the plastic fixings that expand are most effective or a resin bonded type of anchor with no expansion (see fixing function or mechanism) are the most effective.

Where the brick is hollow, a special form locking or resin anchor with sleeve can be considered.

STONE

As with bricks, there are many types of stone used in construction through out the ages not only from the UK but, also many imported types of stone.

Often found in UK buildings are sand and lime stones which vary in strength and density. The so called "softer stones" can be drilled with conventional masonry drill bits and appropriate power tools.

Here it may be possible to use some of the expansion (see function) type fixings either in steel or plastic. Resin may also be a suitable method in which to fix into stone.

However, with much denser stones such as granite, diamond drilling is the only effective way to make a hole, and also limits the type of fixing that can be used. More often than not the most effective fixing is the one that does not expand. In this case, again a resin anchor can provide the required solution.



MORTAR

Common to all of the above materials is the mortar used between the joints of the above materials. Generally, composing of sand and cement and often with lime as an additional material. Again, these can vary in strength and composition. However, fixing into a mortar composition. However, fixing into a mortar joint should be avoided where possible. Nevertheless, sometimes this cannot be the case.

PANEL MATERIALS

As with bricks there is a large number of panel materials to name but a few, plasterboard, steel sheet, timber panel material (plywood, chipboard) composite panels that include high pressure laminate (HPL), cement and resin based materials. By contrast to brick, which tends to be used these days for external cladding, panel materials are used for both interior and exterior decoration of effective ways to construct internal walls and or partitions. By far the most frequently encountered panel material in construction is plasterboard. This is used as part of a ceiling or wall construction for industrial and domestic buildings.

For not only plasterboard but, all of the above materials, a special fixing or fastener that has been manufactured for that specific type of panel must be used.

CONCRETE

By far the most common substrate used for structural connections and steel anchors. Manufactured to specific compressive strengths that can typically range from 15N/mm² to 55N/mm². Although, for tall structures the strength may reach as much as 100N/mm².

The main materials used to make concrete basically are aggregate, cement and water. Modern, material processing equipment has meant that other ingredients are used that may make the concrete lighter without loss of strength such as pulverized fuel ash, PFA as an alternative to aggregate.

As concrete has very high strength in compression but is of low tensile strength, reinforcement bars are used to improve the concretes tensile capacity.

The inclusion of reinforcement brings problems of its own for the anchor installer. As often due to the amount of reinforcement there may be problems drilling a hole to the required depth and thus effect the installation of the anchor. The table below indicates the various concrete strengths found in not only the UK but additional countries.

COUNTRY	TEST CONTAINER CUBE CYLINDER	DIMENSION (CM)	STRENGTH DESIGNATION	UNIT OF STRENGTH	NATIONAL/ INTERNATIONAL STANDARD
AUSTRIA	•	20 x 20 x 20	B5/B80, B10/B120, B15/B160, B20/B225, B25/B300, B30/350, B40/B500, B50/B600, B60/B700	N/mm ² /kp/cm ²	ON B 4200
CHINA	•	15 x 15 x 15	C15, C20, C25, C30, C35, C40, C45, C55, C60	N/mm ²	GBJ 10-89
DENMARK	•	15 x 30	5, 10, 15, 25, 35, 45, 55	N/mm ²	DS 411
FRANCE	•	16 x 32	C20/25, C25/30, C30/37, C35/45, C40/50, C45/55, C50/60	N/mm ²	
GERMANY	•	20 x 20 x 20	B15, B25, B35, B45, B55	N/mm ²	DIN 1045
UK	•	15 x 15 x 15	C25/10	N/mm ²	BS 1881: Part 116
ITALY	•	20 x 20 x 20 15 x 15 x 15 16 x 16 x 16	C12/15, C20/25, C30/37, C40/50, C50/60	N/mm ²	ENV 206
JAPAN	•	10 x 20	> 15	N/mm ²	JIS A 1108
KOREA	•	10 x 20	C180, C210, C240, C270, C300	kg/cm ²	KS F 2405
HOLLAND	•	15 x 15 x 15	B15, B25, B35, B45, B55, B65		NEN 6720
SPAIN		15 x 30	Non-reinforced HM-20, HM-25, HM-30 concrete HM-35, HM-40, HM-45, HM-50 Reinforced concrete HA-25, HA-30, HA-35, HA-40, HA-45, HA-50 Pre-Stressed HP-25, HP-30, HP-45 concrete HP-40, HP-45, HP-50	N/mm ²	EHE
SWEDEN	•	15 x 15 x 15	K8, K12, K16, K20, K25, K30, K40, K45, K50, K55, K60, K70, K80	N/mm ²	BBK 79
SWITZERLAND	•	20 x 20 x 20	B25/15, B30/20, B35/25, B40/30, B45/35, B50/40		SIA 162
USA	•	15 x 30	2000, 3000, 4000, 6000	PSI	ACI 318

ANCHOR FUNCTIONING

In today's markets there are many names and designations that have been given to fixing's and anchors in relation to how they work during installation and what keeps them in place.

However, there are four main operating mechanisms under which 99.5% of all anchors and fixings work. These are:

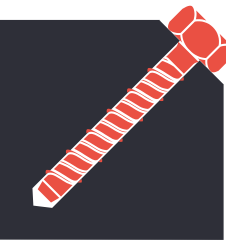
EXPANSION , TORQUE CONTROLLED



FORM-LOCKING (MECHANICAL INTERLOCK)



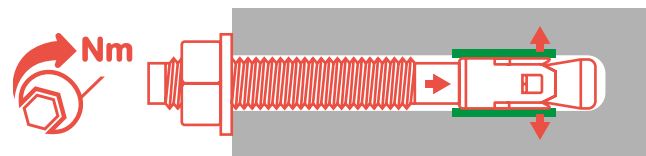
BONDING



EXPANSION - DEFORMATION CONTROLLED



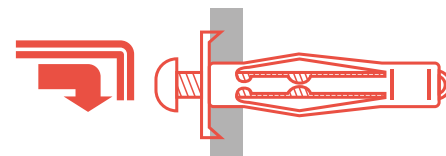
EXPANSION, TORQUE CONTROLLED



In this case a metal sleeve, (steel anchors) through which either a threaded rod or bolt pass, which at the end of the thread has a cone. The bolt will have a nut and washer which when tightened, draws the cone into the sleeve, pressing against the side of the drill hole and in doing so produces friction that holds the fixing in place.

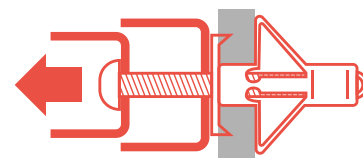
A typical example of the above is the Nexus Sleeve anchor or the Nexus Heavy Duty anchor.

FORM-LOCKING (MECHANICAL INTERLOCK)



There are a number of ways in which a fixing may form lock and this tends to be either a metal or steel fixing which changes its shape (form) during installation and locks against the substrate into which it is being used. Unlike an expansion type of anchor there is no 'expansion' pressure which may lead to additional problems.

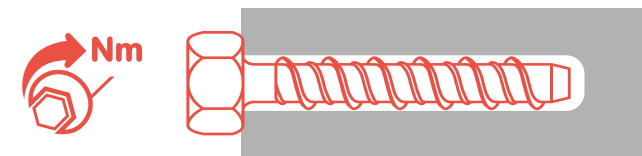
A typical example would be the Nexus Hollow Wall Anchor which when being installed into a panel material such as plasterboard, collapses from a cylindrical shape into what often appears to be like an open umbrella, against the back of the plasterboard



Although, in principle not a mechanical functioning fixing, the resin bonded anchor when installed into a hollow wall with a sleeve, can also be classified as being form-locking, in that the sleeve has a liquid resin injected into the sleeve, filling the sleeve and the immediate area outside. A threaded rod is pushed into the soft resin and left to harden. Once hard the resin will have filled the voids (formed) around the sleeve and retain the threaded rod embedded into the resin thus creating a form-locking anchorage in the hollow material.

An example of this would be the CA Chemical Injection Mortar in conjunction with the CA plastic sleeve insert.

BONDING

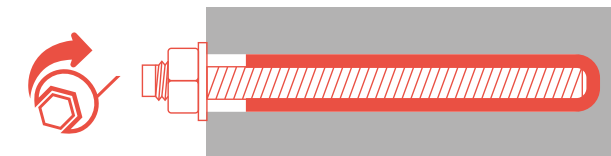


Also known as a stress-free type of anchor. Which means that there is no expansion force when the anchor is installed and are used for high load capacity. Although, the description of the above is an example, is for form-locking, the same material can be used to provide an installation where by a resin material bonds, in most cases a threaded rod (rebar where possible) to the substrate.

Resin fixing is mainly the result of a chemical reaction taking place when a resin and hardener (activator) are mixed together and set to harden with final strengths often in excess of the material into which they are installed. The speed of the setting process is dependant on the ambient temperatures.

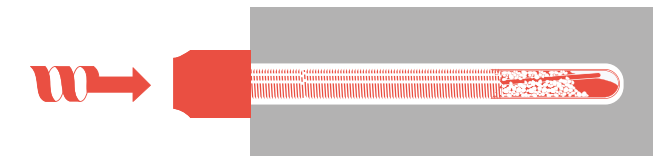
Cement is also a bonding material but not used in the main for these types of anchors. The common materials are Epoxy, Epoxy Acrylate and Polyester.

DISPENSING

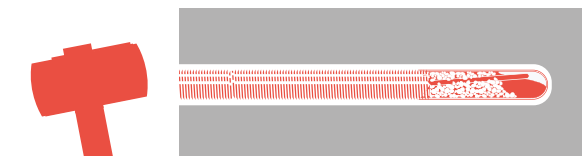


A number of dispensing options are available:

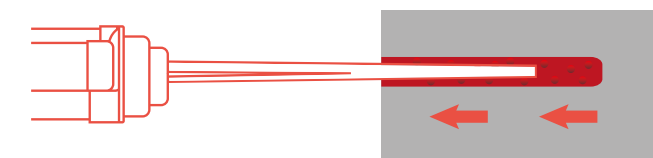
- Nexus Spin-In glass capsule with resin, fine aggregate (quartz sand) and a hardener.



- Nexus Hammer-in glass capsule with resin and hardener



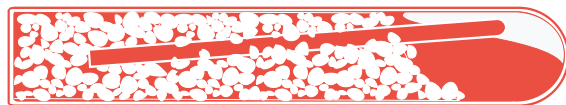
- Nexus Chemical Injection Mortar a two compartmental plastic cartridge, one containing hardener and the other resin with fine aggregate fillers.



In addition there are also hand mixed materials which are usually supplied in tins or bags and mixed together by hand. They tend to be used for non-fixing applications where the anchor is less than 30mm Ø.

The fixing works by bonding a threaded rod with a suitable resin to the substrate. For hollow materials a suitable Nexus sleeve must be used to contain the resin material, see above.

GLASS CAPSULES



A hole is drilled into the substrate and cleaned to remove as much of the dust as possible. This is to prevent the resin from bonding to the residual drill dust rather than the hole. To do this correctly a brush and dust removal pump are required. Brushing and blowing the dust from the hole.

Once cleaned the resin (glass capsule, spin-in) is placed in the hole. The threaded rod is then driven into the capsule breaking it and mixing the resin and hardener together as it progresses down the hole.

The resin is then left to harden.

Although, a capsule, the Hammer-in as described, literally hammered in place. Once again the hole must be cleaned as previously described. The capsule is placed in the hole and the rod, usually re-bar, and is driven into the capsule mixing the two materials together bonding to the drill hole. This is then left to harden.

The two above glass capsule types are specific to a corresponding drill hole Ø and depth.

CARTRIDGE SYSTEM



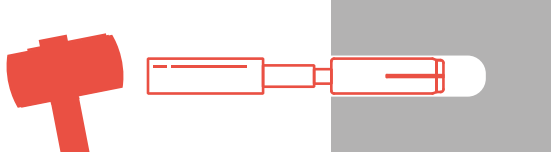
Finally, with a mixing nozzle (included with each cartridge) attached to the end of the cartridge, it is then placed into the appropriate application gun. This will depend upon the type of the cartridge used. In some cases a conventional "sealant" application gun can be used.

The trigger is then pulled, which forces the hardener and resin out of the cartridge and into the nozzle.

Generally, the colour of the mixed resin is darker than either of the two components before being mixed together and indicates that the material is suitable to use. The nozzle is placed in the bottom of the drill hole. Resin is dispensed by pulling on the trigger and removing the nozzle from the hole as doing so. The hole is then completely full with the material. Either threaded rod or re-bar is then pushed into the soft resin and left to harden, bonding to the side of the drill hole.



DEFORMATION CONTROLLED



Eccentrically an expansion anchor, the main difference being that the expansion is done by driving a cone (using supplied setting tool) down through the sleeve to set the anchor. This is unlike the conventional expansion anchors that rely upon a tightening torque to make the fixing function.



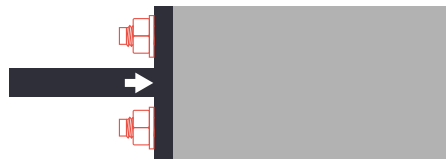
During the selection process and by far the most overlooked aspect of making the correct choice of Nexus fixing products, is the type of installation used and how that can have a major effect on the overall cost of the installation if done incorrectly.



FLUSH FIXING

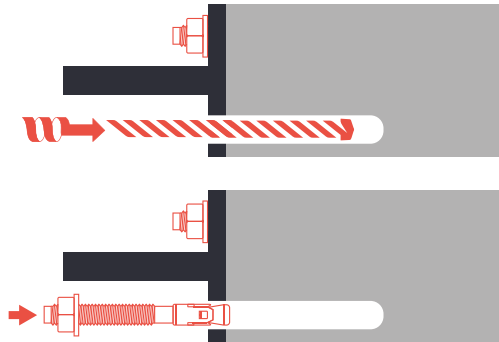


A flush fixing is made by positioning the attachment in the place where you wish it to remain. The holes for the fixing are marked and the attachment is then moved so that the holes may be drilled to suit the size of fixing selected. Please note that often the hole diameter for the fixing is larger than the hole in the attachment.



The fixing is then placed into the hole with the attachment being then repositioned and either the screw or bolt being put through the attachment and tightened home.

THROUGH FIXING



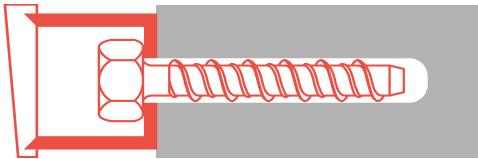
Flush fixings tends to work fine when a single fixing is being made and the item is not too heavy or large, that moving it may cause problems. However, a high degree of accuracy is required and unless done correctly may cause problems with multiple fixings.

In most cases by using a suitable Nexus through fixing, the problem of alignment are overcome and the requirement to move the attachment is done away with. This greatly improves productivity and therefore reduces the time and cost for an installation.

The attachment is put in its permanent position. The holes for fixings are then drilled "through" the attachment, after which the fixing is placed into the hole and tightened, with out the need to remove and re-position the attachment.

Naturally, care must be taken to ensure that the holes in the attachment are nether too big or too small before starting the installation.

STAND-OFF FIXING



The two previously mentioned methods of installation deal with the attachment being held firmly against the substrate. There are however a considerable number of applications where the attachment needs to be held away from the surface, for perhaps alignment or structural reasons. The anchor or fixing will be made in such a way that the position of the hole is marked on the substrate followed by the drilling of the hole for what may be a Nexus expansion or resin anchor. The anchor is installed in such a way that an attachment may be made to it after the installation is completed.

A typical example would be the brackets for a cladding system, or a timber lining for a plasterboard wall.

Often not given consideration required during the selection process and sometimes even ignored, but can have, and it must be said not immediate consequences but future possible serious problems. So to make the correct choice of material from which your Nexus anchor produced will overcome any future areas of concern.

ENVIROMENT

If we consider that anchors in the main will be used either, internally or, externally, this way the process of understanding the environment and its effects on the installed fixing can be better understood and therefore the material and or plating from which the final fixing can be produced determined to deal with the local conditions.

External applications will more often than not require the use of perhaps stainless steel. If you are unsure about levels of pollution in certain areas, date concerning relating to this, can be obtained from organizations such as the World Bank.

The table below issued in 1998 records pollution levels in various locations around the world and indicates the extent of pollution in the respective city.

Again the locations where a product will be used can be further defined as Rural, Urban and Industrial.

CITY	SUSPENDE PARTICULATE UG/M3	SULFAR DIOXIDE UG/M3
BEIJING	377	90
CALCUTTA	375	49
HELSINKI	40	4
LOS ANGELES	46	9
MOSCOW	100	109
NEW YORK	23	26
PARIS	14	14
RIO DE JANERIO	139	129
SYDNEY	54	28
TOKYO	49	18
TORONTO	36	17

STAND-OFF FIXING

Rural or suburban areas will normally have low population with light industry that does not produce high levels of corrosion. However, the prevailing winds may alter this and should be considered when making a specification.

Urban areas that include residential, commercial and light industry with low levels of traffic, producing some pollution. The levels of pollution can increase due to no pollution controls being present or local conditions being such that they create the environment for corrosion to take place.

INDUSTRIAL AREAS

Typical results of high levels of corrosion found in industrial area are sulphur and nitrogen oxide found in chemical and processing plants. Air bound soot from fuel or iron oxides are also typical of highly polluted atmospheres in areas where no controls are in place to combat the problem and therefore worsen the situation.

Further corrosion of architectural and structural metals including some stainless steels can be found in areas with little or no air pollution controls.

COSTAL AND DE-ICING SALT EXPOSURE

Combinations of humidity, high temperature, light rain fall, fog, together with de-icing salt deposits on some stainless steels will cause the material to absorb these deposits and due to the presence of moisture form a highly corrosive salt solution.

In these cases, where perhaps the materials are either splashed, or partially submerged for short periods of time in corrosive environments, the expert advice should be sort to determine the most suitable material.

COASTAL AND MARINE ENVIRONMENTS

For reasons of design and determining how far a coastal region is seen to be effected by the prevailing conditions, (salt water carried by air) can be considered as much as 16Km (10 miles) inland. In some cases where high winds are present, this may be even further.!

To provide suitable protection for applications that are either regularly splashed or completely submerged in sea water. The following materials, super duplex, super ferritic and super stainless steel with at least 6% molybdenum must be

FIRE

With modern building design, considerations of how suitable preventional measures may be taken early on in the design process to combat fires if, and when they take place, can and does have a major influence in selecting the correct materials that will prevent either the onslaught or stop completely the spread of fires.

It must however be said that at the moment there are no regulations that govern the design of either fixings and anchors in situations where fire may occur. A major influence in understanding the requirement is not just how does the product behave in its own right in a fire.? But, rather how does the attachment and the anchor or fixing perform together when tested in a fire.

In general all fire tests that have been conducted have been done mainly into concrete, whereas there are a vast number of fixings that have been and will be installed into either masonry, stone and not forgetting panel materials such as plasterboard.

One of many solutions is to apply one of a numerous number of coatings that can be applied to the fixing or anchor, which at the same time is being applied to the attachment. The type and coating thickness will also effect the overall performance of the whole application and therefore should be considered in its own right. It may be possible that with the suitable protective coating that the application may last for as much as 30 times longer. As a guide the protective material must be applied to the area against which the attachment will sit, equivalent to that of 2 times the fixing embedment depth in the substrate. In addition, there are currently at the moment no common procedures for testing anchors and

fixings in fire situations. Therefore, in most areas unless the application is repetitive to such an extent that a high number of the applications are the same, and unless a test from a commercial point of view is deemed to be economical. Fire tests on a whole have been carried out in isolation.

The real bench mark for fire is at 500 C where the steel yield strength is reduced by half and at slightly higher temperatures, the tread of the anchor will fail before the anchor actually fails. Bearing in mind that not only the steel is affected by the temperature, but also that of the concrete, both compressive and tensile strengths may again be reduced by as much as half. It should also be bourn in mind that in an application the applied load may be not only in tension but also shear or a combination of both forces. Therefore, once again the problem in a given fire situation is very difficult to establish without the need of a specific test for a specific situation.

By selecting a suitable stainless steel the overall performance compared to a carbon steel may be twice as high. In the past resin anchors have been considered to be unsuitable for fire rated applications. However, testing has shown that the performance is only slightly reduced. As already discussed the nut may well fail (temp. Causes thread striping) before the anchor.

In each case, either the local or national standards that relate to fired and prevention must be observed.

LOADS, FORCES & DESIGN

It could be said that no one fixing or anchor application when considering the design could be the same.

However, the forces acting on the fixing either short term or long term must be carefully considered and determined in accordance to current engineering practice, In general terms, these forces will either act in pure tension, shear or a combination of both.

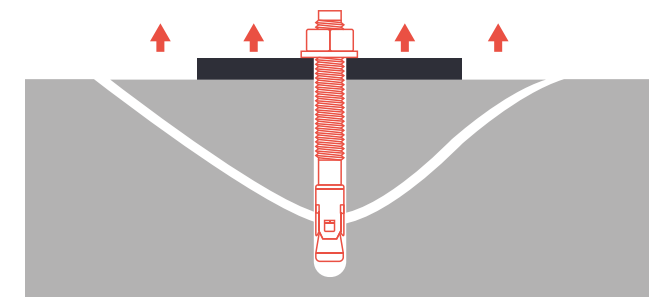
At the same time the fixing may also be subjected to not only static loading but also dynamic and shock loading. Therefore, to understand the fixing performance requirements fully, the possible modes of failure must also be looked at, then the selection of the anchor can be successfully carried out.

It should also be said that although more than sufficient information is available for the performance of fixing into concrete (unreinforced), there are a considerable amount of installations carried out into other materials such as masonry. In this case and where no previous test reports or approvals are available, then the only option is to conduct either on-site-tests or in particular manufacturers factories.

TENSILE FAILURE

When subjected to a tensile force (static) an anchor will fail in concrete either by the concrete itself failing or the fixing steel yielding and subsequent failure.

In the case of concrete failure, the tensile strength of the fixing is greater than that of the concretes tensile strength and will therefore fail.



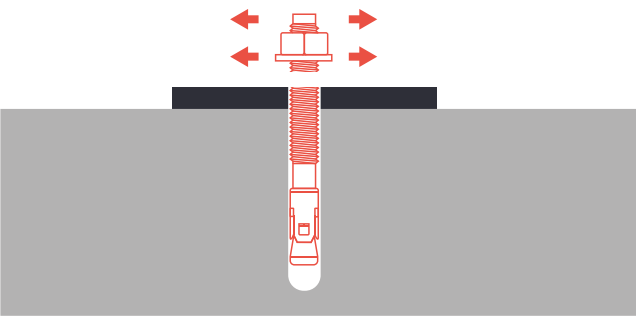
The size of the concrete failure cone will in most cases be three times the anchors effective embedment depth hef in diameter and therefore also has an influence on not only the spacing between any adjacent fixing but also the edge distance ac.

In the case of steel failure the engineer needs to consider the respective fixings steel properties and cross-sectional area of the steel As and then calculate the strength of the steel to determine if the fixing is suitable or not.

Having determined the mode of failure that could possibly occur for the fixing, then you can refer to the data for each Nexus fixing to establish a suitable anchor for your application.

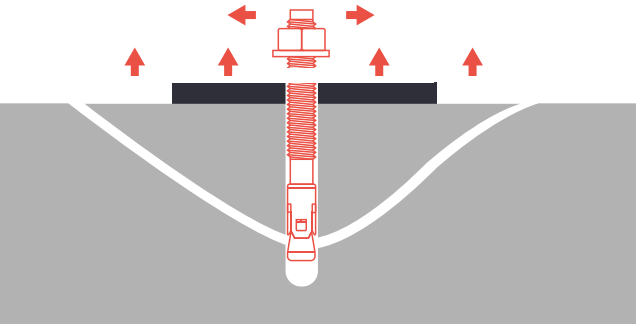
SHEAR VALUE

As with tension the shear value related to the fixing steel capacity and the fixings distance to the edge of the substrate. Where the anchor is of sufficient distance from the edge, so that no failure of the concrete will occur, then, in this case the fixings steel capacity must be calculated in the same way as for tension.



COMBINED TENSION AND SHEAR

Depending on the application there are times when both tension and shear are acting at the same time on the fixing. In this case both tension and shear must be calculated and which ever the greater will determine the fixing capacities requirements.



SECTION 1

MECHANICAL ANCHORS

WEDGE - ANCHOR

(White Zinc Plated)
Non Cracked Concrete



APPLICATIONS

- Barriers
- Railings
- Warehouse racking
- Structural beams and columns
- Warehouse racking
- Safety related installations



ADVANTAGE

- Consistent performance in all types of concrete
- Drill size same as anchor size
- Easy and simple installation
- Through fixing

BASE MATERIAL



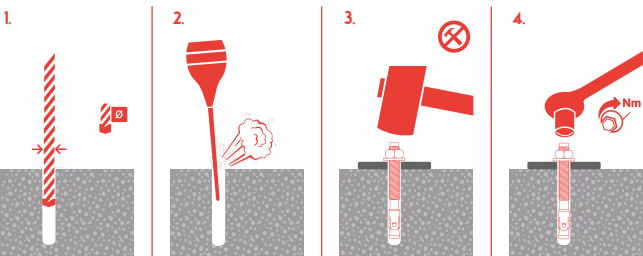
ANCHOR BAR MATERIAL

Carbon Steel white zinc plated
(Body, Nut, Washer and Expansion Clip)

APPROVALS



INSTALLATION DRAWINGS



PRODUCT REFERENCE	HOLE/DRILL DIAMETER	ANCHOR LENGTH	MIN NOM EMBEDMENT DEPTH	MIN HOLE DEPTH	INSTA TORQUE FTLBS (NM)	BOX PACKING	CARTON PACKING
WA0100100010	1/4	1 1/2	1 1/8	1 1/4	4 (5)	100	500
WA0100100020	1/4	1 3/4	1 1/8	1 1/4	4 (5)	100	500
WA0100100030	1/4	2 1/4	1 1/8	1 1/4	4 (5)	100	500
WA0100100040	1/4	3 1/4	1 1/8	1 1/4	4 (5)	100	500
WA0100100050	3/8	2 1/4	1 5/8	1 3/4	20 (27)	50	250
WA0100100060	3/8	2 3/4	1 5/8	1 3/4	20 (27)	50	250
WA0100100070	3/8	3	1 5/8	1 3/4	20 (27)	50	250
WA0100100080	3/8	3 1/2	1 5/8	1 3/4	20 (27)	50	250
WA0100100090	3/8	3 3/4	1 5/8	1 3/4	20 (27)	50	250
WA0100100100	3/8	5	1 5/8	1 3/4	20 (27)	50	200
WA0100100110	3/8	7	1 5/8	1 3/4	20 (27)	50	200
WA0100100120	1/2	2 3/4	2 1/4	2 1/2	40 (54)	25	125
WA0100100130	1/2	3 3/4	2 1/4	2 1/2	40 (54)	25	125
WA0100100140	1/2	4 1/4	2 1/4	2 1/2	40 (54)	25	100
WA0100100150	1/2	5 1/2	2 1/4	2 1/2	40 (54)	25	100
WA0100100160	1/2	7	2 1/4	2 1/2	40 (54)	25	100
WA0100100170	1/2	8 1/2	2 1/4	2 1/2	40 (54)	25	50
WA0100100180	1/2	10	2 1/4	2 1/2	40 (54)	25	50
WA0100100190	1/2	12	2 1/4	2 1/2	40 (54)	25	50
WA0100100200	5/8	3 1/2	2 1/4	3 1/8	80 (108)	20	80
WA0100100210	5/8	4 1/2	2 3/4	3 1/8	80 (108)	20	80
WA0100100220	5/8	5	2 3/4	3 1/8	80 (108)	20	80
WA0100100230	5/8	6	2 3/4	3 1/8	80 (108)	20	80
WA0100100240	5/8	7	2 3/4	3 1/8	80 (108)	20	80
WA0100100250	5/8	8 1/2	2 3/4	3 1/8	80 (108)	20	40
WA0100100260	5/8	10	2 3/4	3 1/8	80 (108)	10	20
WA0100100270	5/8	12	2 3/4	3 1/8	80 (108)	10	20
WA0100100280	3/4	4 1/4	3 3/8	3 5/8	110 (149)	10	40
WA0100100290	3/4	4 3/4	3 3/8	3 5/8	110 (149)	10	40
WA0100100300	3/4	5 1/2	3 3/8	3 5/8	110 (149)	10	40
WA0100100310	3/4	6 1/4	3 3/8	3 5/8	110 (149)	10	40
WA0100100320	3/4	7	3 3/8	3 5/8	110 (149)	10	40
WA0100100330	3/4	8 1/2	3 3/8	3 5/8	110 (149)	10	20
WA0100100340	3/4	10	3 3/8	3 5/8	110 (149)	10	20
WA0100100350	3/4	12	3 3/8	3 5/8	110 (149)	5	10

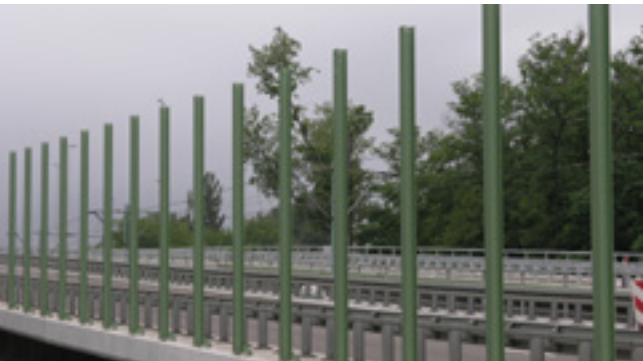
WEDGE - ANCHOR

(White Zinc Plated)
Cracked and Non Cracked Concrete



APPLICATIONS

- Tension applications - Cable trays/Strut/Pipe supports
- Barriers
- Railings
- Warehouse racking
- Structural beams and columns
- Warehouse racking
- Safety related installations



ADVANTAGE

- Consistent performance in all types of concrete
- Drill size same as anchor size
- Easy and simple installation
- Through fixing

ANCHOR BAR MATERIAL

Carbon Steel white zinc plated - Body, Nut and Washer
Stainless Steel A4-316 Expansion Clip

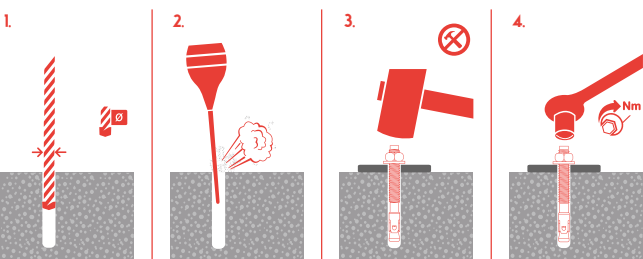
BASE MATERIAL



APPROVALS



INSTALLATION DRAWINGS



PRODUCT REFERENCE	HOLE/DRILL DIAMETER	ANCHOR LENGTH	MIN NOM EMBEDMENT DEPTH	MIN HOLE DEPTH	INSTA TORQUE FT.LBS (NM)	BOX PACKING	CARTON PACKING
WA0100500010	3/8	3	2 3/8	2 5/8	20 (27)	50	250
WA0100500020	3/8	3 1/2	2 3/8	2 5/8	20 (27)	50	250
WA0100500030	3/8	3 3/4	2 3/8	2 5/8	20 (27)	50	250
WA0100500040	3/8	5	2 3/8	2 5/8	20 (27)	50	200
WA0100500050	1/2	3 3/4	2 1/2 3 3/4	2 3/4 4	40 (54)	25	125
WA0100500060	1/2	4 1/2	2 1/2 3 3/4	2 3/4 4	40 (54)	25	100
WA0100500070	1/2	5 1/2	2 1/2 3 3/4	2 3/4 4	40 (54)	25	100
WA0100500080	1/2	7	2 1/2 3 3/4	2 3/4 4	40 (54)	25	100
WA0100500090	1/2	8 1/2	2 1/2 3 3/4	2 3/4 4	40 (54)	25	50
WA0100500100	5/8	4 3/4	3 7/8 4 7/8	4 1/4 5 1/4	60 (81)	20	80
WA0100500110	5/8	5	3 7/8 4 7/8	4 1/4 5 1/4	60 (81)	20	80
WA0100500120	5/8	6	3 7/8 4 7/8	4 1/4 5 1/4	60 (81)	20	80
WA0100500130	5/8	7	3 7/8 4 7/8	4 1/4 5 1/4	60 (81)	20	80
WA0100500140	5/8	8 1/2	3 7/8 4 7/8	4 1/4 5 1/4	60 (81)	20	40
WA0100500150	3/4	5 1/2	4 1/2 5 3/4	5 6 1/4	110 (149)	10	40
WA0100500160	3/4	6 1/4	4 1/2 5 3/4	5 6 1/4	110 (149)	10	40
WA0100500170	3/4	7	4 1/2 5 3/4	5 6 1/4	110 (149)	10	40
WA0100500180	3/4	8 1/2	4 1/2 5 3/4	5 6 1/4	110 (149)	10	20

WEDGE - ANCHOR

(Hot Dipped Galvanised)
Cracked and Non Cracked Concrete



APPLICATIONS

- Tension applications - Cable trays/Strut/Pipe supports
- Barriers
- Railings
- Warehouse racking
- Structural beams and columns
- Warehouse racking
- Safety related installations



ADVANTAGE

- Consistent performance in all types of concrete
- Drill size same as anchor size
- Easy and simple installation
- Through fixing

ANCHOR BAR MATERIAL

Hot Dipped Galvanised - Body, Nut and Washer
Stainless Steel A4-316 Expansion Clip

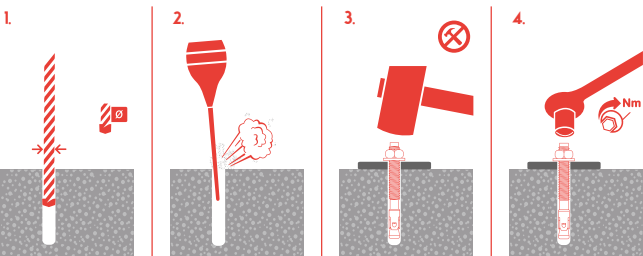
BASE MATERIAL



APPROVALS



INSTALLATION DRAWINGS



PRODUCT REFERENCE	HOLE/DRILL DIAMETER	ANCHOR LENGTH	MIN NOM EMBEDMENT DEPTH	MIN HOLE DEPTH	INSTA TORQUE FT.LBS (NM)	BOX PACKING	CARTON PACKING
WA0100700010	3/8	3	1 3/4 2 3/8	2 2 5/8	20 (27)	50	250
WA0100700020	3/8	3 3/4	1 3/4 2 3/8	2 2 5/8	20 (27)	50	250
WA0100700030	3/8	5	1 3/4 2 3/8	2 2 5/8	20 (27)	50	200
WA0100700040	3/8	7	1 3/4 2 3/8	2 2 5/8	20 (27)	50	200
WA0100700050	1/2	2 3/4	2 2 1/2 3 3/4	2 1/2 3 4 1/4	40 (54)	25	125
WA0100700060	1/2	3 3/4	2 2 1/2 3 3/4	2 1/2 3 4 1/4	40 (54)	25	125
WA0100700070	1/2	4 1/2	2 2 1/2 3 3/4	2 1/2 3 4 1/4	40 (54)	25	100
WA0100700080	1/2	5 1/2	2 2 1/2 3 3/4	2 1/2 3 4 1/4	40 (54)	25	100
WA0100700090	1/2	7	2 2 1/2 3 3/4	2 1/2 3 4 1/4	40 (54)	25	100
WA0100700100	5/8	3 1/2	2 3/8 3 3/8 4 5/8	2 7/8 3 7/8 5 1/8	60 (81)	20	80
WA0100700110	5/8	5	2 3/8 3 3/8 4 5/8	2 7/8 3 7/8 5 1/8	60 (81)	20	80
WA0100700120	5/8	6	2 3/8 3 3/8 4 5/8	2 7/8 3 7/8 5 1/8	60 (81)	20	80
WA0100700130	5/8	8 1/2	2 3/8 3 3/8 4 5/8	2 7/8 3 7/8 5 1/8	60 (81)	20	40
WA0100700140	3/4	4 3/4	3 3/8 5	3 7/8 5 1/2	110 (149)	10	40
WA0100700150	3/4	5 1/2	3 3/8 5	3 7/8 5 1/2	110 (149)	10	40
WA0100700160	3/4	7	3 3/8 5	3 7/8 5 1/2	110 (149)	10	40
WA0100700170	3/4	8 1/2	3 3/8 5	3 7/8 5 1/2	110 (149)	10	20

WEDGE - ANCHOR

(Stainless Steel - A2-304 and A4-316)
Non Cracked Concrete



APPLICATIONS

- Tension applications - Cable trays/Strut/Pipe supports
- Barriers
- Railings
- Structural beams and columns
- Warehouse racking
- Safety related installations



ADVANTAGE

- Consistent performance in all types of concrete
- Drill size same as anchor size
- Easy and simple installation
- Through fixing
- Corrosion resistant

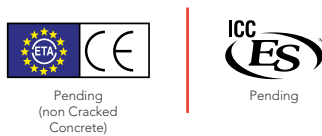
BASE MATERIAL



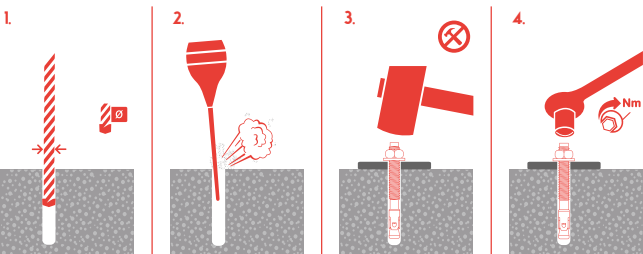
ANCHOR BAR MATERIAL

Stainless Steel A2-304 Grade
Stainless Steel A4-316 Grade

APPROVALS



INSTALLATION DRAWINGS



PRODUCT REFERENCE A2-304	PRODUCT REFERENCE A4-316	HOLE/DRILL DIAMETER	ANCHOR LENGTH	MIN NOM EMBEDMENT DEPTH	MIN HOLE DEPTH	INSTA TORQUE FT.LBS (NM)	BOX PACKING	CARTON PACKING
WA0100900010	WA0100950010	1/4	1 3/4	1 1/8	1 1/4	6 (8)	100	500
WA0100900020	WA0100950020	1/4	2 1/4	1 1/8	1 1/4	6 (8)	100	500
WA0100900030	WA0100950030	1/4	3 1/4	1 1/8	1 1/4	6 (8)	100	500
WA0100900040	WA0100950040	3/8	2 1/4	1 3/8	1 1/2	25 (34)	50	250
WA0100900050	WA0100950050	3/8	2 3/4	1 3/8	1 1/2	25 (34)	50	250
WA0100900060	WA0100950060	3/8	3	1 3/8	1 1/2	25 (34)	50	250
WA0100900070	WA0100950070	3/8	3 1/2	1 3/8	1 1/2	25 (34)	50	250
WA0100900080	WA0100950080	3/8	3 3/4	1 3/8	1 1/2	25 (34)	50	250
WA0100900090	WA0100950090	3/8	5	1 3/8	1 1/2	25 (34)	50	200
WA0100900100	WA0100950100	3/8	7	1 3/8	1 1/2	25 (34)	50	200
WA0100900110	WA0100950110	1/2	2 2/3	1 7/8	2	40 (54)	25	125
WA0100900120	WA0100950120	1/2	3 3/4	1 7/8	2	40 (54)	25	125
WA0100900130	WA0100950130	1/2	4 1/4	1 7/8	2	40 (54)	25	100
WA0100900140	WA0100950140	1/2	5 1/2	1 7/8	2	40 (54)	25	100
WA0100900150	WA0100950150	1/2	7	1 7/8	2	40 (54)	25	100
WA0100900160	WA0100950160	1/2	8 1/2	1 7/8	2	40 (54)	25	50
WA0100900170	WA0100950170	1/2	10	1 7/8	2	40 (54)	25	50
WA0100900180	WA0100950180	1/2	12	1 7/8	2	40 (54)	25	50
WA0100900190	WA0100950190	5/8	3 1/2	2 1/2	2 5/8	60 (81)	20	80
WA0100900200	WA0100950200	5/8	4 1/2	2 1/2	2 5/8	60 (81)	20	80
WA0100900210	WA0100950210	5/8	5	2 1/2	2 5/8	60 (81)	20	80
WA0100900220	WA0100950220	5/8	6	2 1/2	2 5/8	60 (81)	20	80
WA0100900230	WA0100950230	5/8	7	2 1/2	2 5/8	60 (81)	20	80
WA0100900240	WA0100950240	5/8	8 1/2	2 1/2	2 5/8	60 (81)	20	40
WA0100900250	WA0100950250	5/8	10	2 1/2	2 5/8	60 (81)	10	20
WA0100900260	WA0100950260	5/8	12	2 1/2	2 5/8	60 (81)	10	20
WA0100900270	WA0100950270	3/4	4 1/4	3 3/8	3 1/2	110 (149)	10	40
WA0100900280	WA0100950280	3/4	4 3/4	3 3/8	3 1/2	110 (149)	10	40
WA0100900290	WA0100950290	3/4	5 1/2	3 3/8	3 1/2	110 (149)	10	40
WA0100900300	WA0100950300	3/4	6 1/4	3 3/8	3 1/2	110 (149)	10	40
WA0100900310	WA0100950310	3/4	7	3 3/8	3 1/2	110 (149)	10	40
WA0100900320	WA0100950320	3/4	8 1/2	3 3/8	3 1/2	110 (149)	10	20
WA0100900330	WA0100950330	3/4	10	3 3/8	3 1/2	110 (149)	10	20
WA0100900340	WA0100950340	3/4	12	3 3/8	3 1/2	110 (149)	5	10

SLEEVE ANCHOR

(white zinc plated)



APPLICATIONS

- Lightweight structures
- Electrical and Mechanical
- Shelving and steel sections



ADVANTAGE

- Variety of Head types
- Fixture clamp down feature
- All steel component design
- Pre-assembled anchor for quick installation

BASE MATERIAL



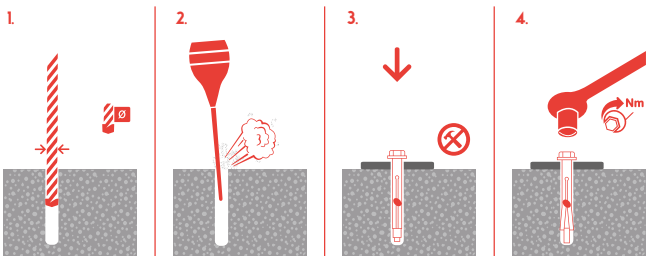
ANCHOR BAR MATERIAL

Carbon Steel - white zinc plating

HEAD TYPES



INSTALLATION DRAWINGS



PRODUCT REFERENCE	HOLE/DRILL DIAMETER	ANCHOR LENGTH	MAX. FIXTURE THICKNESS	WRENCH SIZE	BOX PACKING	CARTON PACKING

HEX NUT TYPE

SA0100100010	5/16	1 1/2	3/8	7/16	100	500
SA0100100020	5/16	2 1/2	1 1/16	7/16	50	250
SA0100100030	3/8	1 7/8	3/8	1/2	50	250
SA0100100040	3/8	3	1 1/2	1/2	50	200
SA0100100050	3/8	4	2 1/4	1/2	50	200
SA0100100060	1/2	2 1/4	1/2	9/16	50	200
SA0100100070	1/2	3	3/4	9/16	25	100
SA0100100080	1/2	4	1 3/4	9/16	25	100
SA0100100090	1/2	6	3 3/8	9/16	20	80
SA0100100100	5/8	2 1/4	1/2	3/4	25	100
SA0100100110	5/8	3	3/4	3/4	20	80
SA0100100120	5/8	4 1/4	1 1/2	3/4	10	40
SA0100100130	5/8	6	3 1/4	3/4	10	40
SA0100100140	3/4	2 1/2	1/2	15/16	10	40
SA0100100150	3/4	4 1/4	7/8	15/16	10	40
SA0100100160	3/4	6 1/4	2 7/8	15/16	5	20

ROUND HEAD TYPE

SA0100200010	1/4	2	7/8	#3	100	500
SA0100200020	1/4	2 3/4	1 5/8	#3	50	250
SA0100200030	3/8	2 1/2	1	#4	50	200
SA0100200040	3/8	3 3/4	2 1/4	#4	50	200
SA0100200050	3/8	4 3/4	3 1/4	#4	50	200

FLAT HEAD TYPE

SA0100300010	1/4	2	7/8	#2	100	500
SA0100300020	1/4	3	1 7/8	#2	50	250
SA0100300030	5/16	2 1/2	1 1/16	#3	50	250
SA0100300040	5/16	3 1/2	2 1/16	#3	50	250
SA0100300050	3/8	2 3/4	1 1/4	#4	50	200
SA0100300060	3/8	4	2 1/2	#4	50	200
SA0100300070	3/8	5	3 1/2	#4	50	200
SA0100300080	3/8	6	4 1/2	#4	50	200

ACORN HEAD TYPE

SA0100400010	1/4	1 3/8	1/4	3/8	100	500
SA0100400020	1/4	2 1/4	1 1/8	3/8	100	500

CONCRETE BOLT FLANGE HEAD

(white zinc plated)
Cracked and Non Cracked Concrete



APPLICATIONS

- Stadium seating
- Racking and shelving
- Temporary attachments
- Fencing and railing
- Mechanical installations
- Protective barriers



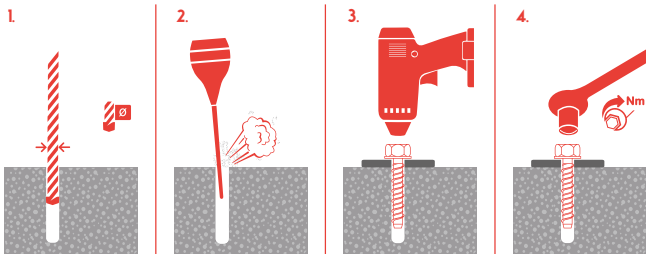
ADVANTAGE

- Quick installation time
- Stress applied across full length of anchor
- Can be installed close to edge applications
- Fully removable

BASE MATERIAL



INSTALLATION DRAWINGS



ANCHOR BAR MATERIAL

Carbon Steel - white zinc plating
Hot Dipped Galvanised

APPROVALS



PRODUCT REFERENCE	ANCHOR DIAMETER	ANCHOR LENGTH	HOLE DIAMETER	MIN HOLE DEPTH	INSTA TORQUE FT.LBS (NM)	WRENCH SIZE	BOX PACKING	CARTON PACKING
CB0100100010	1/4	1 1/4	1/4	1 3/8	19 (26)	7/16	100	600
CB0100100020	1/4	1 3/4	1/4	1 3/8	19 (26)	7/16	100	600
CB0100100030	1/4	2 1/4	1/4	1 3/8	19 (26)	7/16	100	600
CB0100100040	1/4	2 5/8	1/4	1 3/8	19 (26)	7/16	100	500
CB0100100050	1/4	3	1/4	1 3/8	19 (26)	7/16	100	500
CB0100100060	3/8	1 3/4	3/8	1 7/8	25 (34)	9/16	50	300
CB0100100070	3/8	2 1/2	3/8	1 7/8	25 (34)	9/16	50	300
CB0100100080	3/8	3	3/8	1 7/8	25 (34)	9/16	50	250
CB0100100090	3/8	4	3/8	1 7/8	25 (34)	9/16	50	250
CB0100100100	3/8	5	3/8	1 7/8	25 (34)	9/16	50	250
CB0100100110	3/8	6	3/8	1 7/8	25 (34)	9/16	50	150
CB0100100120	1/2	2	1/2	2 1/8	45 (61)	3/4	50	200
CB0100100130	1/2	2 1/2	1/2	2 1/8	45 (61)	3/4	50	200
CB0100100140	1/2	3	1/2	2 1/8	45 (61)	3/4	25	150
CB0100100150	1/2	4	1/2	2 1/8	45 (61)	3/4	25	150
CB0100100160	1/2	5	1/2	2 1/8	45 (61)	3/4	25	100
CB0100100170	1/2	6	1/2	2 1/8	45 (61)	3/4	25	75
CB0100100180	1/2	8	1/2	2 1/8	45 (61)	3/4	25	100
CB0100100190	5/8	3	5/8	2 7/8	60 (81)	15/16	25	100
CB0100100200	5/8	4	5/8	2 7/8	60 (81)	15/16	25	100
CB0100100210	5/8	5	5/8	2 7/8	60 (81)	15/16	25	75
CB0100100220	5/8	6	5/8	2 7/8	60 (81)	15/16	25	75
CB0100100230	5/8	8	5/8	2 7/8	60 (81)	15/16	25	50
CB0100100240	3/4	3	3/4	2 7/8	70 (95)	1 1/8	20	60
CB0100100250	3/4	4	3/4	2 7/8	70 (95)	1 1/8	20	60
CB0100100260	3/4	5	3/4	2 7/8	70 (95)	1 1/8	20	60
CB0100100270	3/4	6	3/4	2 7/8	70 (95)	1 1/8	20	60
CB0100100280	3/4	8	3/4	2 7/8	70 (95)	1 1/8	10	40
CB0100100290	3/4	10	3/4	2 7/8	70 (95)	1 1/8	10	20

CONCRETE BOLT ROD HANGER

(white zinc plated)
Cracked and Non Cracked Concrete



APPLICATIONS

- Suspended ceilings
- Cable trays
- Overhead utilities
- Air conditioning
- Ventilation systems
- Lighting systems



ADVANTAGE

- Quick installation time
- Stress applied across full length of anchor
- Can be installed close to edge applications
- Fully removable

ANCHOR BAR MATERIAL

Carbon Steel - white zinc plating

BASE MATERIAL



APPROVALS



Option 1 - ETA-12/0552



Fire Approval



Pending

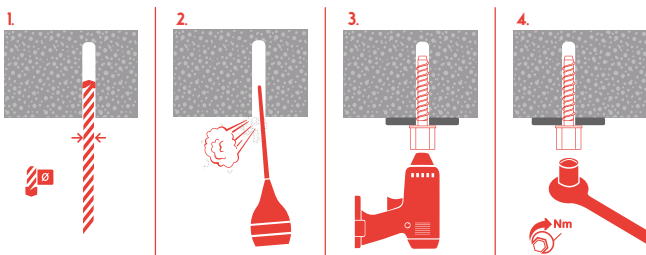


Pending



Pending

INSTALLATION DRAWINGS



PRODUCT REFERENCE	ANCHOR SCREW DIAMETER	ANCHOR SCREW LENGTH	MIN HOLE DEPTH	MIN. EMBEDMENT DEPTH	INSTA TORQUE FT.LBS (NM)	SOCKET SIZE	BOX PACKING	CARTON PACKING
CB0100300010	1/4	1 5/8	2 2 7/8	1 5/8 2 1/2	19 (26)	3/8	25	125
CB0100300020	1/4	1 5/8	2 2 7/8	1 5/8 2 1/2	19 (26)	1/2	25	125
CB0100300030	1/4	2 1/2	2 2 7/8	1 5/8 2 1/2	19 (26)	1/2	25	125

DROP-IN ANCHORS

(white zinc plated and Stainless Steel)
Non Cracked Concrete



APPLICATIONS

- Cable trays
- Fire sprinklers
- Suspended conduit
- Concrete Form-work
- Suspended ceiling and lighting
- Telecommunication installations

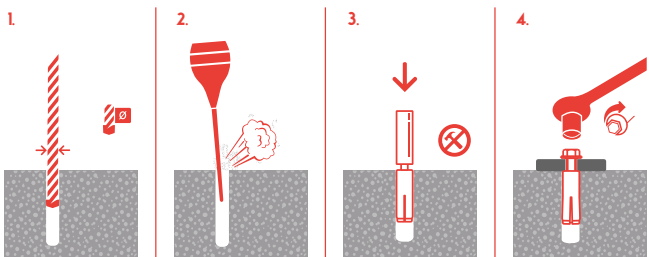
ADVANTAGE

- Simple fastening removal
- Allows for short embedment
- Lipped version installs flush
- Non-Lipped version for deeper embedment

BASE MATERIAL



INSTALLATION DRAWINGS



ANCHOR BAR MATERIAL

Carbon Steel - white zinc plating
Stainless Steel A2-304 Grade
Stainless Steel A4-316 Grade

APPROVALS



PRODUCT REFERENCE	ANCHOR/ ROD DIAMETER	ANCHOR BODY LENGTH	DRILL DIAMETER	THREAD DEPTH	INSTA TORQUE FT.LBS (NM)	BOX PACKING	CARTON PACKING

DROP-IN ANCHOR BZP - NON LIPPED

DA0100100010	1/4	1	3/8	7/16	5	100	500
DA0100100020	3/8	1 1/2	1/2	5/8	10	50	250
DA0100100030	1/2	2	5/8	13/16	20	50	200
DA0100100040	5/8	2 1/2	7/8	1 3/16	40	25	100
DA0100100050	3/4	3 1/8	1	1 3/8	80	20	80

DROP-IN ANCHOR A2-304 STAINLESS STEEL - NON LIPPED

DA0100200010	1/4	1	3/8	7/16	5	100	500
DA0100200020	3/8	1 1/2	1/2	5/8	10	50	250
DA0100200030	1/2	2	5/8	13/16	20	50	200
DA0100200040	5/8	2 1/2	7/8	1 3/16	40	25	100
DA0100200050	3/4	3 1/8	1	1 3/8	80	20	80

DROP-IN ANCHOR A4-316 STAINLESS STEEL - NON LIPPED

DA0100300010	1/4	1	3/8	7/16	5	100	500
DA0100300020	3/8	1 1/2	1/2	5/8	10	50	250
DA0100300030	1/2	2	5/8	13/16	20	50	200
DA0100300040	5/8	2 1/2	7/8	1 3/16	40	25	100
DA0100300050	3/4	3 1/8	1	1 3/8	80	20	80

DROP-IN ANCHOR BZP - LIPPED

DA0100400010	1/4	1	3/8	7/16	5	100	500
DA0100400020	3/8	1 1/2	1/2	5/8	10	50	250
DA0100400030	1/2	2	5/8	13/16	20	50	200

DROP-IN ANCHOR COIL THREAD BZP - NON LIPPED

DA0100400010	1/2	2	5/8	13/16	20	50	200
DA0100400020	3/4	3 1/8	1	1 3/8	80	20	80

PRODUCT REFERENCE	ANCHOR/ ROD DIAMETER	TOOL LENGTH	FOR USE WITH:	BOX PACKING

DROP-IN ANCHOR SETTING TOOLS

DA0100500010	1/4	39/64	DA0100100010 / DA0100200010 / DA0100300010 / DA0100300010	1
DA0100500020	3/8	61/64	DA0100100020 / DA0100200020 / DA0100300020 / DA0100300020	1
DA0100500030	1/2	1 3/16	DA0100100030 / DA0100200030 / DA0100300030 / DA0100300030 / DA0100400010	1
DA0100500040	5/8	1 5/16	DA0100100040 / DA0100200040 / DA0100300040 / DA0100300040	1
DA0100500050	3/4	1 61/64	DA0100100050 / DA0100200050 / DA0100300050 / DA0100300050 / DA0100400020	1

LAG SHIELDS

(zinc alloy)



APPLICATIONS

- Mortar joints
- Shallow attachments
- Masonry Anchorage
- (not for overhead applications)



ADVANTAGE

- Removable for service work
- Hard and soft base materials

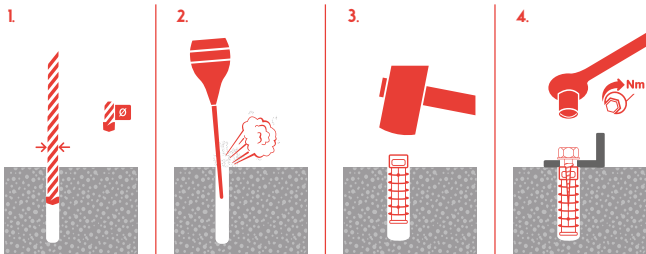
ANCHOR BAR MATERIAL

Zamac alloy

BASE MATERIAL



INSTALLATION DRAWINGS



PRODUCT REFERENCE	ANCHOR/ROD DIAMETER	ANCHOR BODY LENGTH	DRILL DIAMETER	THREAD LENGTH	INSTA TORQUE FT.LBS (NM)	BOX PACKING	CARTON PACKING

LAG SHIELD - SHORT

LS0100100010	1/4	1	1/2	1/2	5	50	500
LS0100100020	5/16	1 1/4	1/2	3/4	7	50	500
LS0100100030	3/8	1 3/4	5/8	1	10	50	500
LS0100100040	1/2	2	3/4	1 1/8	20	50	500
LS0100100050	5/8	2	7/8	1	30	25	125
LS0100100060	3/4	2	1	1 1/8	60	25	125

LAG SHIELD - LONG

LS0100200010	1/4	1 1/2	1/2	1	5	50	500
LS0100200020	5/16	1 3/4	1/2	1	7	50	500
LS0100200030	3/8	2 1/2	5/8	1 1/2	10	50	500
LS0100200040	1/2	3	3/4	1 7/8	20	50	500
LS0100200050	5/8	3 1/2	7/8	2 1/4	30	25	125
LS0100200060	3/4	3 1/2	1	2 1/4	60	25	100

SHIELD ANCHOR - SINGLE & DOUBLE

(Zamac Alloy)



APPLICATIONS

- Ventilation
- Electrical and telecommunication installations
- Securing of scaffolding and falseworks
- Suspending ceilings (double only)
- Lighting (double only)

ADVANTAGE

- Internal thread accepts machine bolts
- Corrosion resistance
- Easy to remove installations
- For use in solid base materials and hollow core slabs



ANCHOR BAR MATERIAL

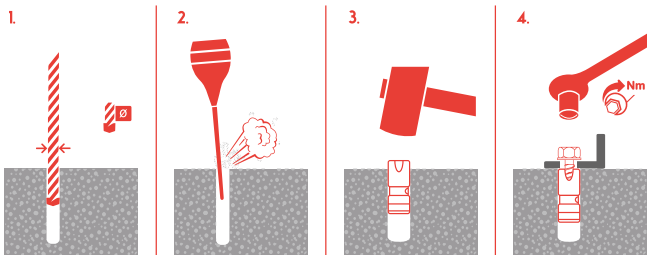
Zinc Alloy

BASE MATERIAL

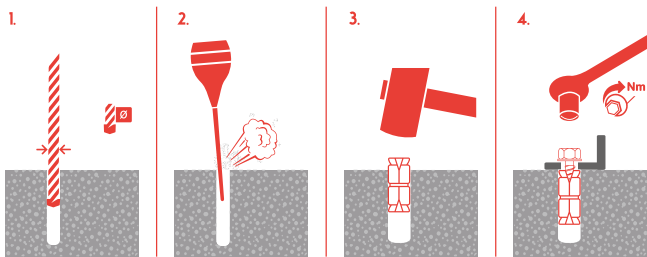


INSTALLATION DRAWINGS

SINGLE



DOUBLE



PRODUCT REFERENCE	ANCHOR/ ROD DIAMETER	ANCHOR BODY LENGTH	DRILL DIAMETER	THREAD LENGTH	INSTA TORQUE FT.LBS (NM)	BOX PACKING	CARTON PACKING

SHIELD ANCHOR - SINGLE

SA0100100010	1/4	1 5/16	1/2	5/16	5	50	250
SA0100100020	5/16	1 1/2	5/8	5/16	7	50	250
SA0100100030	3/8	1 1/2	5/8	5/16	10	50	250
SA0100100040	1/2	2 1/16	7/8	7/16	20	25	125
SA0100100050	5/8	2 5/8	1	5/8	30	25	125

SHIELD ANCHOR - DOUBLE

SA0100200010	1/4	1 3/8	1/2	1/2	5	50	500
SA0100200020	5/16	1 5/8	5/8	1/2	7	50	500
SA0100200030	3/8	2	3/4	5/8	10	50	250
SA0100200040	1/2	2 1/2	7/8	3/4	20	25	250
SA0100200050	5/8	2 3/4	1	7/8	30	25	100
SA0100200060	3/4	3 15/16	1 1/4	1 1/8	60	10	50

METAL HAMMER DRIVE ANCHORS

(white zinc plated and Black Phosphate)



APPLICATIONS

- Pipe hanging
- Cable trays
- Metal tracking
- Security Fixtures
- Concrete Formworks



ADVANTAGE

- One piece pre-expanding anchor
- Tamper proof (Flat and Mushroom Head)

ANCHOR BAR MATERIAL

Carbon Steel - white zinc plating
Carbon Steel - black phosphate coating

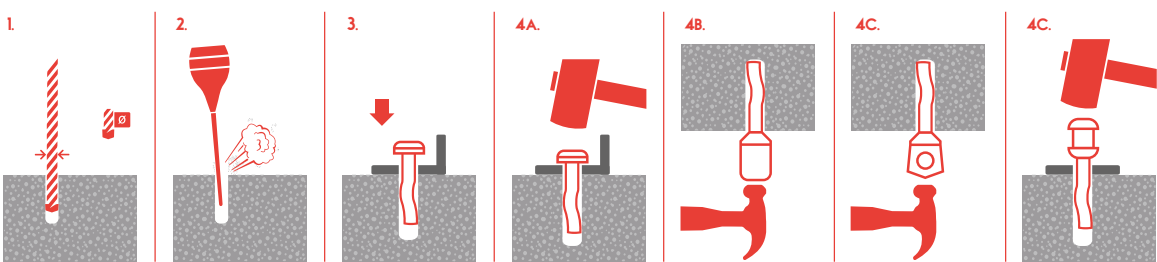
BASE MATERIAL



HEAD TYPES



INSTALLATION DRAWINGS



PRODUCT REFERENCE	ANCHOR DIAMETER	ANCHOR LENGTH	DRILL DIAMETER	MIN EMBEDMENT DEPTH	FIXTURE CLEARANCE HOLE	BOX PACKING	CARTON PACKING

MHD FLAT HEAD - BZP

MH0100100010	3/16	2 1/2	3/16	1 1/4	1/4	100	1000
MH0100100020	3/16	3	3/16	1 1/4	1/4	100	1000
MH0100100030	3/16	4	3/16	1 1/4	1/4	100	1000
MH0100100040	1/4	1 1/2	1/4	1 1/4	5/16	100	1000
MH0100100050	1/4	2	1/4	1 1/4	5/16	100	1000
MH0100100060	1/4	2 1/2	1/4	1 1/4	5/16	100	1000
MH0100100070	1/4	3	1/4	1 1/4	5/16	100	1000
MH0100100080	1/4	3 1/2	1/4	1 1/4	5/16	100	1000
MH0100100090	1/4	4	1/4	1 1/4	5/16	100	500



MHD OVERHEAD THREAD - BZP

MH0100400010	1/4	1/2	3/16	1 1/4	1/4-20	100	1000
MH0100400020	3/8	5/8	1/4	1 3/4	3/8-16	50	500



MHD TIE WIRE - BZP

MH0100500010	3/16	3/16	3/16	1 1/4	37/64	100	500
MH0100500020	1/4	9/32	1/4	1 3/4	41/64	100	500



MHD FORMING - BZP

MH0100600010	3/16	1 1/2	3/16	1 1/4	1/4	100	500
MH0100600020	3/16	2	3/16	1 1/4	1/4	100	500
MH0100600030	3/16	2 3/4	3/16	1 1/4	1/4	100	500
MH0100600040	1/4	2 3/4	1/4	1 1/4	5/16	100	500



PRODUCT REFERENCE	ANCHOR DIAMETER	ANCHOR LENGTH	DRILL DIAMETER	MIN EMBEDMENT DEPTH	FIXTURE CLEARANCE HOLE	BOX PACKING	CARTON PACKING
							

MHD MUSHROOM HEAD - BLACK PHOSPHATE



MH0100300010	3/16	1	3/16	7/8	1/4	100	1000
MH0100300020	3/16	1 1/4	3/16	7/8	1/4	100	1000
MH0100300030	3/16	1 1/2	3/16	1 1/4	1/4	100	1000
MH0100300040	3/16	2	3/16	1 1/4	1/4	100	1000
MH0100300050	3/16	2 1/2	3/16	1 1/4	1/4	100	500
MH0100300060	3/16	3	3/16	1 1/4	1/4	100	500
MH0100300070	3/16	3 1/2	3/16	1 1/4	1/4	100	500
MH0100300080	3/16	4	3/16	1 1/4	1/4	100	500
MH0100300090	1/4	1	1/4	7/8	5/16	100	1000
MH0100300100	1/4	1 1/4	1/4	1	5/16	100	1000
MH0100300110	1/4	1 1/2	1/4	1 1/4	5/16	100	1000
MH0100300120	1/4	2	1/4	1 1/4	5/16	100	500
MH0100300130	1/4	2 1/2	1/4	1 1/4	5/16	100	500
MH0100300140	1/4	3	1/4	1 1/4	5/16	100	500
MH0100300150	1/4	3 1/2	1/4	1 1/4	5/16	100	500
MH0100300160	1/4	4	1/4	1 1/4	5/16	100	500
MH0100300170	3/8	2	3/8	1 3/4	7/16	25	250
MH0100300180	3/8	2 1/2	3/8	1 3/4	7/16	25	250
MH0100300190	3/8	3	3/8	1 3/4	7/16	25	250
MH0100300200	3/8	3 1/2	3/8	1 3/4	7/16	25	250
MH0100300210	3/8	4	3/8	1 3/4	7/16	25	250
MH0100300220	3/8	5	3/8	1 3/4	7/16	25	250
MH0100300230	3/8	6	3/8	1 3/4	7/16	25	250
MH0100300240	1/2	2 3/4	1/2	2 1/2	9/16	50	200
MH0100300250	1/2	3 1/2	1/2	2 1/2	9/16	50	150
MH0100300260	1/2	4	1/2	2 1/2	9/16	25	150
MH0100300270	1/2	5	1/2	2 1/2	9/16	25	150
MH0100300280	1/2	6 1/2	1/2	2 1/2	9/16	25	150

PRODUCT REFERENCE	ANCHOR DIAMETER	ANCHOR LENGTH	DRILL DIAMETER	MIN EMBEDMENT DEPTH	FIXTURE CLEARANCE HOLE	BOX PACKING	CARTON PACKING
							

MHD MUSHROOM HEAD - BZP



MH0100200010	3/16	1	3/16	7/8	1/4	100	1000
MH0100200020	3/16	1 1/4	3/16	7/8	1/4	100	1000
MH0100200030	3/16	1 1/2	3/16	1 1/4	1/4	100	1000
MH0100200040	3/16	2	3/16	1 1/4	1/4	100	1000
MH0100200050	3/16	2 1/2	3/16	1 1/4	1/4	100	500
MH0100200060	3/16	3	3/16	1 1/4	1/4	100	500
MH0100200070	3/16	3 1/2	3/16	1 1/4	1/4	100	500
MH0100200080	3/16	4	3/16	1 1/4	1/4	100	500
MH0100200090	1/4	1	1/4	7/8	5/16	100	1000
MH0100200100	1/4	1 1/4	1/4	1	5/16	100	1000
MH0100200110	1/4	1 1/2	1/4	1 1/4	5/16	100	1000
MH0100200120	1/4	2	1/4	1 1/4	5/16	100	500
MH0100200130	1/4	2 1/2	1/4	1 1/4	5/16	100	500
MH0100200140	1/4	3	1/4	1 1/4	5/16	100	500
MH0100200150	1/4	3 1/2	1/4	1 1/4	5/16	100	500
MH0100200160	1/4	4	1/4	1 1/4	5/16	100	500
MH0100200170	3/8	2	3/8	1 3/4	7/16	25	250
MH0100200180	3/8	2 1/2	3/8	1 3/4	7/16	25	250
MH0100200190	3/8	3	3/8	1 3/4	7/16	25	250
MH0100200200	3/8	3 1/2	3/8	1 3/4	7/16	25	250
MH0100200210	3/8	4	3/8	1 3/4	7/16	25	250
MH0100200220	3/8	5	3/8	1 3/4	7/16	25	250
MH0100200230	3/8	6	3/8	1 3/4	7/16	25	250
MH0100200240	1/2	2 3/4	1/2	2 1/2	9/16	50	200
MH0100200250	1/2	3 1/2	1/2	2 1/2	9/16	50	150
MH0100200260	1/2	4	1/2	2 1/2	9/16	25	150
MH0100200270	1/2	5	1/2	2 1/2	9/16	25	150
MH0100200280	1/2	6 1/2	1/2	2 1/2	9/16	25	150

SECTION 2

SCREW ANCHORS



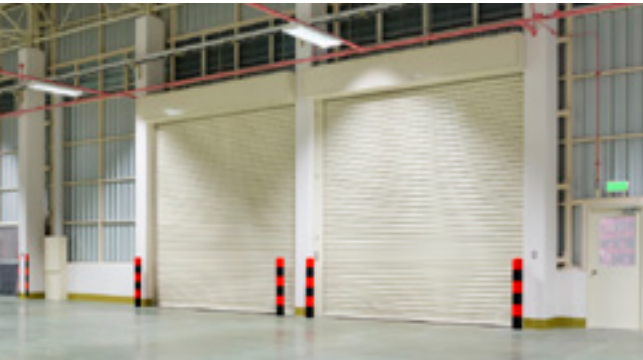
TAP-X SCREW ANCHOR

(Perma-Steel Coated & Stainless Steel - A2-304)



APPLICATIONS

- Metal door frames
- Window Installations
- Shutters
- Joint flashings



ADVANTAGE

- Available in various head types & colours
- No hole spotting required
- No expansion forces

BASE MATERIAL



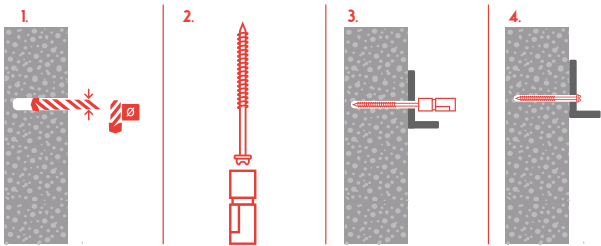
ANCHOR BAR MATERIAL

Perma-Steel Coated
Stainless Steel - A2-304

HEAD TYPES



INSTALLATION DRAWINGS



PRODUCT REFERENCE BLUE	PRODUCT REFERENCE WHITE	ANCHOR DIAMETER	ANCHOR LENGTH	FIXTURE CLEARANCE	THREAD SIZE (UNC)	HEX DRIVER	BOX PACKING	CARTON PACKING

TAP-X - HEX HEAD

TX0100100010	TX0100300010	3/16	1 1/4	1/4	11-16	1/4	100	500
TX0100100020	TX0100300020	3/16	1 3/4	1/4	11-16	1/4	100	500
TX0100100030	TX0100300030	3/16	2 1/4	1/4	11-16	1/4	100	500
TX0100100040	TX0100300040	3/16	2 3/4	1/4	11-16	1/4	100	500
TX0100100050	TX0100300050	3/16	3 1/4	1/4	11-16	1/4	100	500
TX0100100060	TX0100300060	3/16	3 3/4	1/4	11-16	1/4	100	500
TX0100100070	TX0100300070	3/16	4	1/4	11-16	1/4	100	500
TX0100100080	TX0100300080	1/4	1 1/4	5/16	1/4-15	5/16	100	500
TX0100100090	TX0100300090	1/4	1 3/4	5/16	1/4-15	5/16	100	500
TX0100100100	TX0100300100	1/4	2 1/4	5/16	1/4-15	5/16	100	500
TX0100100110	TX0100300110	1/4	2 3/4	5/16	1/4-15	5/16	100	500
TX0100100120	TX0100300120	1/4	3 1/4	5/16	1/4-15	5/16	100	500
TX0100100130	TX0100300130	1/4	3 3/4	5/16	1/4-15	5/16	100	500
TX0100100140	TX0100300140	1/4	4	5/16	1/4-15	5/16	100	500

TAP-X - PHILLIPS FLAT HEAD

TX0100500010	TX0100700010	3/16	1 1/4	1/4	11-16	#2	100	500
TX0100500020	TX0100700020	3/16	1 3/4	1/4	11-16	#2	100	500
TX0100500030	TX0100700030	3/16	2 1/4	1/4	11-16	#2	100	500
TX0100500040	TX0100700040	3/16	2 3/4	1/4	11-16	#2	100	500
TX0100500050	TX0100700050	3/16	3 1/4	1/4	11-16	#2	100	500
TX0100500060	TX0100700060	3/16	3 3/4	1/4	11-16	#2	100	500
TX0100500070	TX0100700070	3/16	4	1/4	11-16	#2	100	500
TX0100500080	TX0100700080	1/4	1 1/4	5/16	1/4-15	#3	100	500
TX0100500090	TX0100700090	1/4	1 3/4	5/16	1/4-15	#3	100	500
TX0100500100	TX0100700100	1/4	2 1/4	5/16	1/4-15	#3	100	500
TX0100500110	TX0100700110	1/4	2 3/4	5/16	1/4-15	#3	100	500
TX0100500120	TX0100700120	1/4	3 1/4	5/16	1/4-15	#3	100	500
TX0100500130	TX0100700130	1/4	3 3/4	5/16	1/4-15	#3	100	500
TX0100500140	TX0100700140	1/4	4	5/16	1/4-15	#3	100	500
TX0100500150	TX0100700150	1/4	5	5/16	1/4-15	#3	100	500
TX0100500160	TX0100700160	1/4	6	5/16	1/4-15	#3	100	500

PRODUCT REFERENCE	MAX SCREW LENGTH	MAX BIT LENGTH	FOR USE WITH:	BOX PACKING

TAP-X INSTALLATION KIT

TX0101100010	4"	5 - 1/2	All TAP X Anchors	1
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PRODUCT REFERENCE STAINLESS STEEL	ANCHOR DIAMETER	ANCHOR LENGTH	FIXTURE CLEARANCE	THREAD SIZE (UNC)	HEX DRIVER	BOX PACKING	CARTON PACKING
							

TAP-X - HEX HEAD

TX0100500010	1/4	1 1/4	5/16	1/4-15	5/16	100	500
TX0100500020	1/4	1 3/4	5/16	1/4-15	5/16	100	500
TX0100500030	1/4	2 1/4	5/16	1/4-15	5/16	100	500
TX0100500040	1/4	2 3/4	5/16	1/4-15	5/16	100	500

TAP-X - PHILLIPS FLAT HEAD

TX0100900010	1/4	1 1/4	5/16	1/4-15	#3	100	500
TX0100900020	1/4	1 3/4	5/16	1/4-15	#3	100	500
TX0100900030	1/4	2 1/4	5/16	1/4-15	#3	100	500
TX0100900040	1/4	2 3/4	5/16	1/4-15	#3	100	500

TIMBERNEX STRUCTURAL WOOD SCREWS

(Perma-Steel Coated)



APPLICATIONS

- Girder truss
- Roofing
- Multiple ply beams



ADVANTAGE

- No pre-drilling required
- Fast and Easy installation
- Tapered Head for flush finishing
- Increased threads for Increased pull down
- Coating protects against corrosion
- Use in Solid and laminated timber

BASE MATERIAL



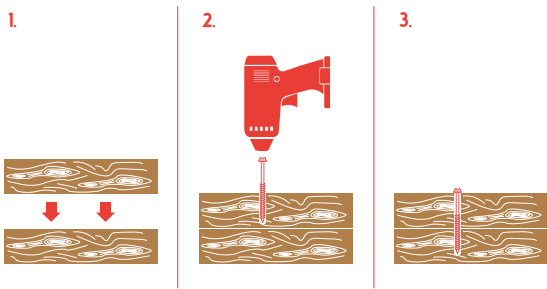
ANCHOR BAR MATERIAL

Perma-Steel Coated

HEAD TYPE



INSTALLATION DRAWINGS



PRODUCT REFERENCE	ANCHOR DIAMETER	ANCHOR LENGTH	THREAD LENGTH	HEX DRIVER	BOX PACKING

BOX PACKAGING

SS0100100010	1/4	2 1/2	1 1/4	1/2	50
SS0100100020	1/4	4	2	1/2	50
SS0100100030	1/4	6	2	1/2	50
SS0100100040	1/4	8	2	1/2	50
SS0100100050	1/4	10	2	1/2	50
SS0100100060	1/4	12	2	1/2	50

TUB PACKAGING

SS0100200010	1/4	2 1/2	1 1/4	1/2	250
SS0100200020	1/4	4	2	1/2	250
SS0100200030	1/4	6	2	1/2	250
SS0100200040	1/4	8	2	1/2	250
SS0100200050	1/4	10	2	1/2	250
SS0100200060	1/4	12	2	1/2	250

LEDGERNEX STRUCTURAL WOOD SCREWS

(Perma-Steel Coated)



APPLICATIONS

- Decking
- Wooden Stair cases
- MDF Panels
- Roofing insulation
- Attic conversions



ADVANTAGE

- No pre-drilling required
- Fast and Easy installation
- Tapped Head for flush finishing
- Coating protects against corrosion

ANCHOR BAR MATERIAL

Perma-Steel Coated

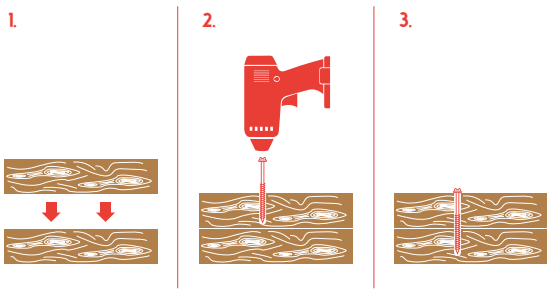
BASE MATERIAL



HEAD TYPE



INSTALLATION DRAWINGS



PRODUCT REFERENCE	ANCHOR DIAMETER	ANCHOR LENGTH	THREAD LENGTH	HEX DRIVER	BOX PACKING
SS0100300010	1/4	3 5/8	2	5/16	50
SS0100300020	1/4	5	3	5/16	50
TUB PACKAGING					
SS0100400010	1/4	3 5/8	2	5/16	250
SS0100400020	1/4	5	3	5/16	250

HEADNEX STRUCTURAL WOOD SCREWS

(Perma-Steel Coated)



APPLICATIONS

- Decking
- Wooden Stair cases
- MDF Panels
- Roofing insulation



ADVANTAGE

- Under head chamfer for increased strength
- Wafer Head for increased pull through
- Variety of lengths covers many application

BASE MATERIAL



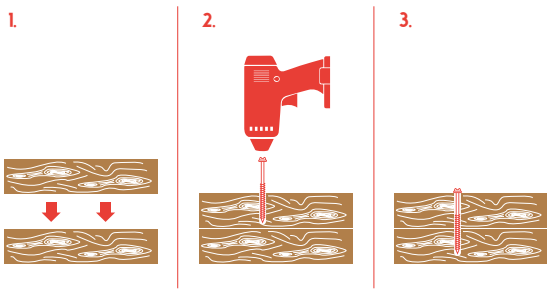
ANCHOR BAR MATERIAL

Perma-Steel Coated

HEAD TYPE



INSTALLATION DRAWINGS



PRODUCT REFERENCE	ANCHOR DIAMETER	ANCHOR LENGTH	THREAD LENGTH	SPIDER DRIVE	BOX PACKING

BOX PACKAGING

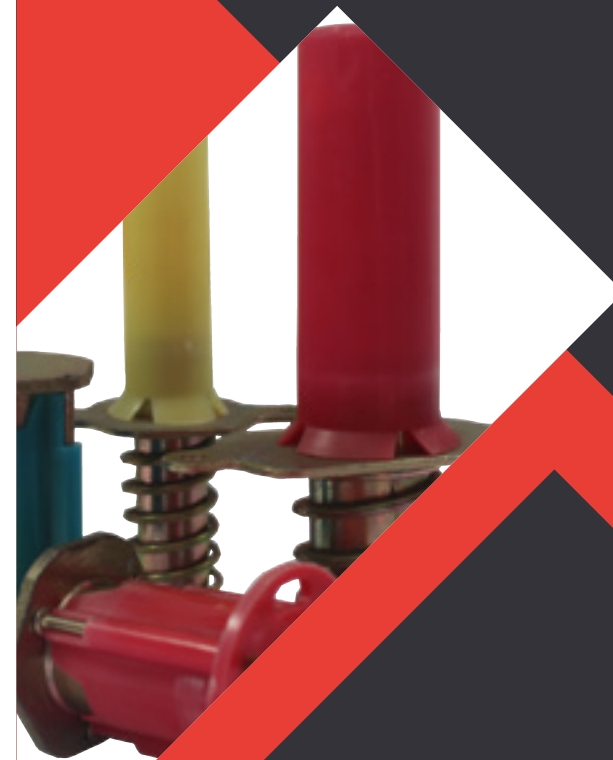
SS0100700010	1/4	1 5/8	2	#3	50
SS0100700020	1/4	2 7/8	2	#3	50
SS0100700030	1/4	3 3/4	2	#3	50
SS0100700040	1/4	4 1/2	2	#3	50
SS0100700050	1/4	5	2	#3	50
SS0100700060	1/4	5 1/2	2	#3	50
SS0100700070	1/4	6	2	#3	50
SS0100700080	1/4	6 1/2	2	#3	50
SS0100700090	1/4	7	2	#3	50
SS0100700100	1/4	7 1/2	2	#3	50
SS0100700110	1/4	8	2	#3	50
SS0100700120	1/4	8 1/2	2	#3	50
SS0100700130	1/4	9	2	#3	50
SS0100700140	1/4	9 1/2	2	#3	50
SS0100700150	1/4	10	2	#3	50
SS0100700160	1/4	11	2	#3	50
SS0100700170	1/4	12	2	#3	50
SS0100700180	1/4	13	2	#3	50
SS0100700190	1/4	14	2	#3	50
SS0100700200	1/4	15	2	#3	50
SS0100700210	1/4	16	2	#3	50
SS0100700220	1/4	18	2	#3	50

BOX PACKAGING

SS0100800010	1/4	1 5/8	2	#3	500
SS0100800020	1/4	2 7/8	2	#3	250
SS0100800030	1/4	3 3/4	2	#3	250
SS0100800040	1/4	4 1/2	2	#3	250
SS0100800050	1/4	5	2	#3	250
SS0100800060	1/4	5 1/2	2	#3	250
SS0100800070	1/4	6	2	#3	250
SS0100800080	1/4	6 1/2	2	#3	250
SS0100800090	1/4	7	2	#3	250
SS0100800100	1/4	7 1/2	2	#3	250
SS0100800110	1/4	8	2	#3	250
SS0100800120	1/4	8 1/2	2	#3	250
SS0100800130	1/4	9	2	#3	250
SS0100800140	1/4	9 1/2	2	#3	250
SS0100800150	1/4	10	2	#3	250
SS0100800160	1/4	11	2	#3	250
SS0100800170	1/4	12	2	#3	250
SS0100800180	1/4	13	2	#3	250
SS0100800190	1/4	14	2	#3	250
SS0100800200	1/4	15	2	#3	250
SS0100800210	1/4	16	2	#3	250
SS0100800220	1/4	18	2	#3	250

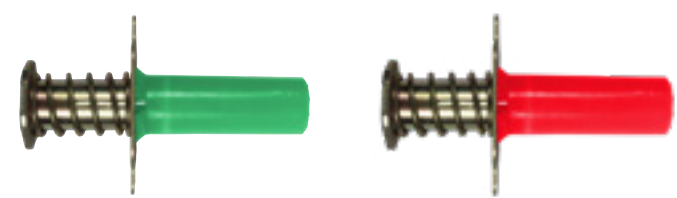
SECTION 3

CAST IN ANCHORS



STEEL DECK INSERTS

(Carbon Steel and Engineered Plastic)



APPLICATIONS

- Sprinkler systems and pipes
- Airconditioning Ductwork
- Overhead utilities
- Suspended cable trays
- Lighting systems



ADVANTAGE

- Colour coding for east selection
- Fast and easy instalation
- Tension and shear loadings
- Low instlation costs
- Installation in wood, form pours only 3.5" thick

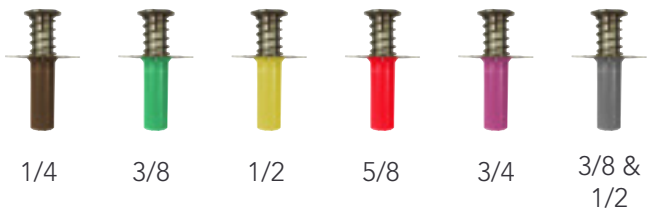
ANCHOR BAR MATERIAL

Carbon Steel
Engineered Plastic

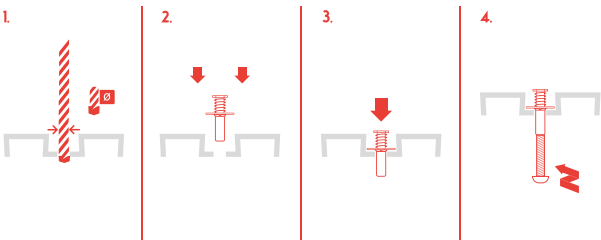
BASE MATERIAL



COLOUR CODING



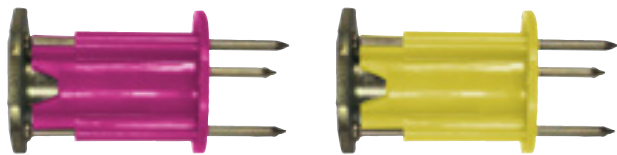
INSTALLATION DRAWINGS



PRODUCT REFERENCE	PRODUCT SIZE/ DESCRIPTION	PRE-DRILLED HOLE	LENGTH OF PLASTIC INSERT	INTERNAL THREAD LENGTH	COLOUR CODING	BOX PACKING
SI0100100010	1/4 Insert	13/16 or 7/8	3 3/8	3/8	Brown	100
SI0100100020	3/8 Insert	13/16 or 7/8	3 3/8	5/8	Green	100
SI0100100030	1/2 Insert	13/16 or 7/8	3 3/8	11/16	Yellow	100
SI0100100040	5/8 Insert	1 3/16 or 1 1/4	3 3/8	15/16	Red	50
SI0100100050	3/4 Insert	1 3/16 or 1 1/4	3 3/8	1 1/8	Purple	50
SI0100100060	3/8 & 1/2 Multi Insert	13/16 or 7/8	3 3/8	9/16	Grey	100

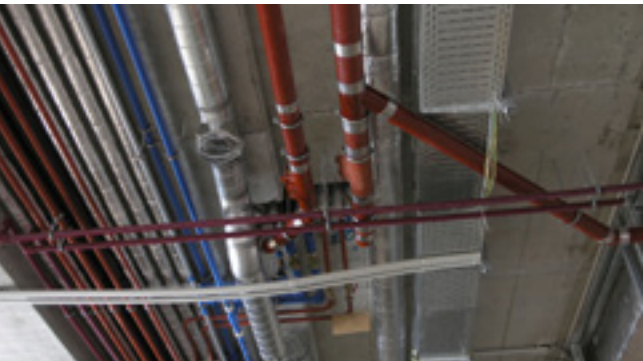
WOOD DECK INSERTS

(Carbon Steel and Engineered Plastic)



APPLICATIONS

- Sprinkler systems and pipes
- Airconditioning Ductwork
- Overhead utilities
- Suspended cable trays
- Lighting systems



ADVANTAGE

- Colour coding for east selection
- Fast and easy installation
- Tension and shear loadings
- Low instlation costs
- Installation in wood, form pours only 3.5" thick

ANCHOR BAR MATERIAL

Carbon Steel
Engineered Plastic

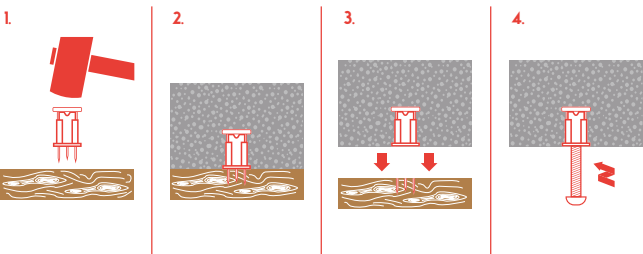
BASE MATERIAL



COLOUR CODING



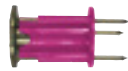
INSTALLATION DRAWINGS



PRODUCT REFERENCE	PRODUCT SIZE/ DESCRIPTION	OVERALL LENGTH (ONCE SET)	BREAK OFF NAIL LENGTH	INTERNAL THREAD LENGTH	COLOUR CODING	BOX PACKING

WOOD INSERT (UNC)

WI0100200010	1/4 Insert	13/16 or 7/8	3 3/8	3/8	Brown	100
WI0100200020	3/8 Insert	13/16 or 7/8	3 3/8	5/8	Green	100
WI0100200030	1/2 Insert	13/16 or 7/8	3 3/8	11/16	Yellow	100
WI0100200040	5/8 Insert	1 3/16 or 1 1/4	3 3/8	15/16	Red	100
WI0100200050	3/4 Insert	1 3/16 or 1 1/4	3 3/8	1 1/8	Purple	100
WI0100200060	3/8 & 1/2 Multi Insert	13/16 or 7/8	3 3/8	9/16	Grey	100



WOOD INSERT (UNC) - WITH NO NAILS

WI0100300010	1/4 Insert no nails	13/16 or 7/8	3 3/8	3/8	Brown	100
WI0100300020	3/8 Insert no nails	13/16 or 7/8	3 3/8	5/8	Green	100
WI0100300030	1/2 Insert no nails	13/16 or 7/8	3 3/8	11/16	Yellow	100
WI0100300040	5/8 Insert no nails	1 3/16 or 1 1/4	3 3/8	15/16	Red	100
WI0100300050	3/4 Insert no nails	1 3/16 or 1 1/4	3 3/8	1 1/8	Purple	100
WI0100300060	3/8 & 1/2 Multi Insert	13/16 or 7/8	3 3/8	9/16	Grey	100



SECTION 4

LIGHTWEIGHT ANCHORS



ZAMAC NAIL-IN ANCHORS

(zamac alloy)



APPLICATIONS

- Roof Flashing
- Brick Ties
- Signage
- Electrical Fixtures



ADVANTAGE

- Quick impact instalation
- Universal Anchoring
- Hammer or Screwdriver driven
- Use in a variety of base materials

ANCHOR BAR MATERIAL

Zamac Alloy (Body)
Carbon Steel (Nail)

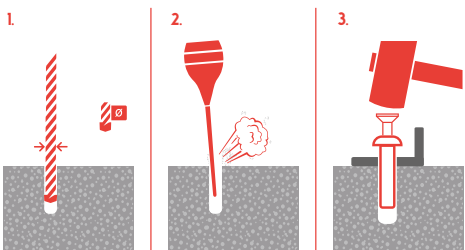
BASE MATERIAL



HEAD TYPES



INSTALLATION DRAWINGS



PRODUCT REFERENCE	ANCHOR DIAMETER	ANCHOR LENGTH	DRILL DIAMETER	HEAD HEIGHT	FIXTURE CLEARANCE HOLE	BOX PACKING	CARTON PACKING
ZAMAC NAIL-IN ROUND HD							
ZN0100100010	3/16	7/8	3/16	7/64	1/4	100	500
ZN0100100020	1/4	3/4	1/4	9/64	5/16	100	500
ZN0100100030	1/4	1	1/4	9/64	5/16	100	500
ZN0100100040	1/4	1 1/4	1/4	9/64	5/16	100	500
ZN0100100050	1/4	1 1/2	1/4	9/64	5/16	100	500
ZN0100100060	1/4	2	1/4	9/64	5/16	100	500
ZN0100100070	1/4	3	1/4	9/64	5/16	100	500
ZAMAC NAIL-IN FLAT HD							
ZN0100200010	1/4	1 1/2	1/4	3/16	5/16	100	500
ZN0100200020	1/4	2	1/4	3/16	5/16	100	500

ZAMAC HAMMERSCREWS

(zamac alloy)



APPLICATIONS

- Drywall tracking
- Signage
- Brick ties



ADVANTAGE

- Quick impact instalation
- Universal Anchoring
- Hammer or Screwdriver driven
- Use in a variety of base materials

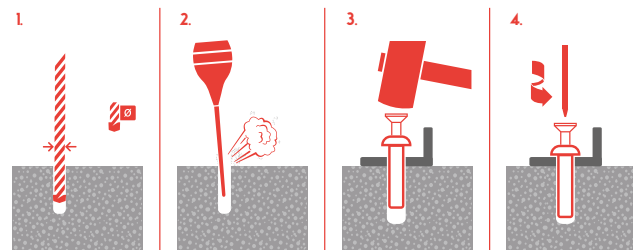
ANCHOR BAR MATERIAL

Zamac Alloy (Body)
Carbon Steel (Screw)

BASE MATERIAL



INSTALLATION DRAWINGS



PRODUCT REFERENCE	ANCHOR DIAMETER	ANCHOR LENGTH	DRILL DIAMETER	HEAD HEIGHT	FIXTURE CLEARANCE HOLE	BOX PACKING	CARTON PACKING
ZAMAC HAMMERSCREWS ROUND HEAD BZP							
ZH0100100010	1/4	3/4	3/16	9/64	5/16	100	500
ZH0100100020	1/4	1	1/4	9/64	5/16	100	500
ZH0100100030	1/4	1 1/4	1/4	9/64	5/16	100	500
ZH0100100040	1/4	1 1/2	1/4	9/64	5/16	100	500
ZH0100100050	1/4	2	1/4	9/64	5/16	100	500
ZH0100100060	1/4	2 1/4	1/4	9/64	5/16	100	500
ZH0100100070	1/4	3	1/4	9/64	5/16	100	500

NYLON NAIL-IN ANCHORS

(nylon body, carbon steel nail)



APPLICATIONS

- Electrical Fixtures and Fittings
- Brick Ties
- Alluminium frames



ADVANTAGE

- Quick impact instalation
- Universal Anchoring
- Hammer or Screwdriver driven

BASE MATERIAL



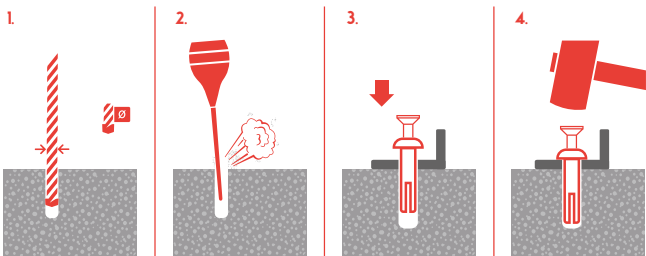
ANCHOR BAR MATERIAL

Nylon (Body)
Carbon Steel (Nail)

HEAD TYPES



INSTALLATION DRAWINGS



PRODUCT REFERENCE	ANCHOR DIAMETER	ANCHOR LENGTH	DRILL DIAMETER	HEAD HEIGHT	FIXTURE CLEARANCE HOLE	BOX PACKING	CARTON PACKING

NYLON NAIL-IN ROUND HD



NH0100100010	3/16	1	3/16	1/8	1/4	100	1000
NH0100100020	3/16	1 1/2	3/16	1/8	1/4	100	1000
NH0100100030	1/4	1	1/4	1/8	5/16	100	1000
NH0100100040	1/4	1 1/2	1/4	1/8	5/16	100	1000
NH0100100050	1/4	2	1/4	1/8	5/16	100	1000

NYLON NAIL-IN FLAT HD



NH0100200010	3/16	1	3/16	1/8	1/4	100	1000
NH0100200020	3/16	1 1/2	3/16	1/8	1/4	100	1000
NH0100200030	1/4	1	1/4	1/8	5/16	100	1000
NH0100200040	1/4	1 1/2	1/4	1/8	5/16	100	1000
NH0100200050	1/4	2	1/4	1/8	5/16	100	1000

NYLON NAIL-IN MUSHROOM HD



NH0100300010	3/16	1	3/16	1/8	1/4	100	1000
NH0100300020	1/4	3/4	1/4	1/8	5/16	100	1000
NH0100300030	1/4	1	1/4	1/8	5/16	100	1000
NH0100300040	1/4	1 1/2	1/4	1/8	5/16	100	1000
NH0100300050	1/4	2	1/4	1/8	5/16	100	1000
NH0100300060	1/4	3	1/4	1/8	5/16	100	1000
NH0100300070	1/4	4	1/4	1/8	5/16	100	1000
NH0100300080	1/4	6	1/4	1/8	5/16	100	500

PLASTERBOARD ANCHORS

(nylon or zamac alloy)

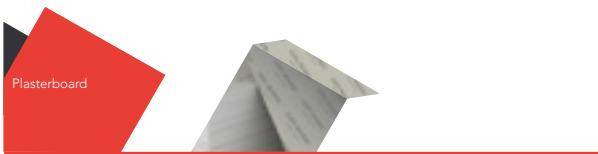
APPLICATIONS

- Electrical fixtures
- Shelving
- Telephone systems
- Curtain Poles
- Plumbing
- Interior finishing
- Miscellaneous hardware

ADVANTAGE

- Fully removable
- No requirement for pre-drilling
- Accurate fixing with tooth design
- Open-Mouth version suits and length of screw

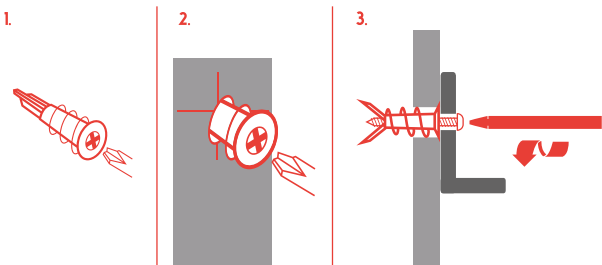
BASE MATERIAL



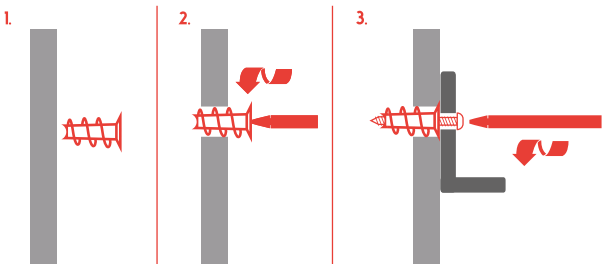
ANCHOR BAR MATERIAL

Engineered Nylon
Zamac Alloy

INSTALLATION DRAWINGS



OPEN MOUTH



PRODUCT REFERENCE	ANCHOR LENGTH	COLLAR SIZE	THREAD LENGTH	SCREW SIZE RANGE (NO.)	SCREWS SIZE	BOX PACKING	CARTON PACKING

NYLON PLASTERBOARD ANCHOR

NP0100100010	1 11/16	9/16	15/16	6,8	no screws	100	1000
NP0100100020	1 11/16	9/16	15/16	6,8	8 x 1"	100	1000

ZINC PLASTERBOARD ANCHOR

ZP0100100010	1 5/16	9/16	15/16	8,10	no screws	100	1000
ZP0100100020	1 5/16	9/16	15/16	8,10	8 x 1"	100	1000

NYLON PLASTERBOARD OPEN MOUTH ANCHOR

ZP0200100010	1 5/16	9/16	15/16	8,10	no screws	100	1000
ZP0200100020	1 5/16	9/16	15/16	8,10	8 x 1"	100	1000

ZINC PLASTERBOARD OPEN MOUTH ANCHOR

ZP0200200010	1 5/16	9/16	15/16	8,10	no screws	100	1000
ZP0200200020	1 5/16	9/16	15/16	8,10	8 x 1"	100	1000

METAL PICTURE HOOK

(zamac alloy)



APPLICATIONS

- Pictures frames
- Mirrors



ADVANTAGE

- No requirement for pre-drilling

ANCHOR BAR MATERIAL

Zamac Alloy

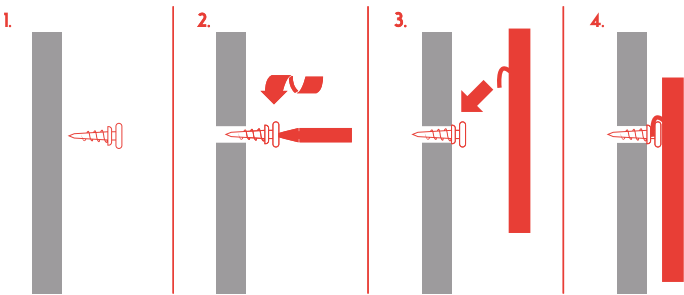
BASE MATERIAL



HEAD COLOUR TYPES



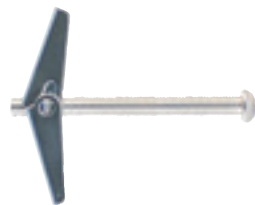
INSTALLATION DRAWINGS



PRODUCT REFERENCE	ANCHOR DIAMETER	ANCHOR LENGTH	HEAD DIAMETER	PHILLIPS DRIVER	HEAD FINISH	BOX PACKING	CARTON PACKING
MP0100100010		1 2/16	8/16	#2	BZP	100	1000
MP0100100020		1 2/16	8/16	#2	white	100	1000

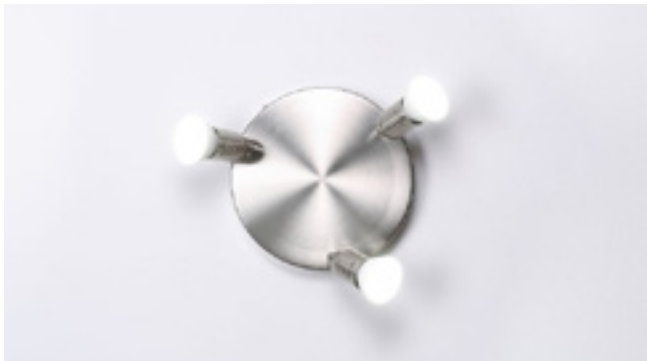
SPRING TOGGLES

(white zinc plated)



APPLICATIONS

- Installation
- Suspended Ceiling Hangers
- Lighting
- Fire resistant cabling



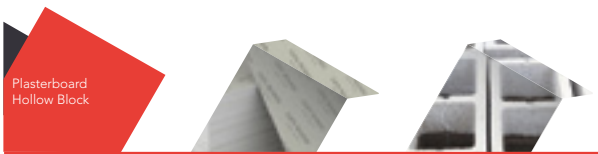
ADVANTAGE

- Adjustable for various wall thicknesses
- Fast and easy installation and removal
- Non-flamable fixing

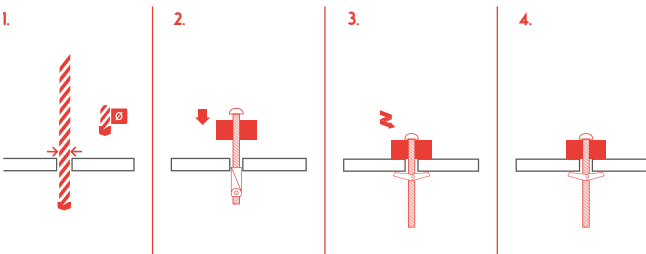
ANCHOR BAR MATERIAL

Carbon Steel - white zinc plating

BASE MATERIAL



INSTALLATION DRAWINGS



PRODUCT REFERENCE	ANCHOR DIAMETER	ANCHOR LENGTH	DRILL DIAMETER	WING	THREAD SIZE (UNC)	BOX PACKING	CARTON PACKING
ST0100100010	1/8	2	3/8	1 1/16	6-32	100	500
ST0100100020	1/8	3	3/8	1 1/16	6-32	100	500
ST0100100030	1/8	4	3/8	1 1/16	6-32	100	500
ST0100100040	3/16	2	1/2	1 3/8	10-24	50	250
ST0100100050	3/16	3	1/2	1 3/8	10-24	50	250
ST0100100060	3/16	4	1/2	1 3/8	10-24	50	200
ST0100100070	3/16	5	1/2	1 3/8	10-24	50	200
ST0100100080	3/16	6	1/2	1 3/8	10-24	50	200
ST0100100090	1/4	3	5/8	1 1/2	1/4-20	50	200
ST0100100100	1/4	4	5/8	1 1/2	1/4-20	50	200
ST0100100110	1/4	5	5/8	1 1/2	1/4-20	50	200
ST0100100120	1/4	6	5/8	1 1/2	1/4-20	50	200
ST0100100130	5/16	3	7/8	2 1/8	5/16-18	25	100
ST0100100140	5/16	4	7/8	2 1/8	5/16-18	25	100
ST0100100150	5/16	5	7/8	2 1/8	5/16-18	25	100
ST0100100160	5/16	6	7/8	2 1/8	5/16-18	25	100
ST0100100170		3	7/8	2 1/8	3/8-16	25	100
ST0100100180	3/8	4	7/8	2 1/8	3/8-16	25	100
ST0100100190	3/8	5	7/8	2 1/8	3/8-16	25	100
ST0100100200	3/8	6	7/8	2 1/8	3/8-16	25	100
ST0100100210	1/2	4	1 1/4	3	1/2-13	25	100
ST0100100220	1/2	6	1 1/4	3	1/2-13	25	100

WING ONLY



PRODUCT REFERENCE	ANCHOR DIAMETER	ANCHOR LENGTH	DRILL DIAMETER	WING	THREAD SIZE (UNC)	BOX PACKING	CARTON PACKING
ST0100200010	1/8		3/8	1 1/16	6-32	100	500
ST0100200020	3/16		1/2	1 3/8	10-24	100	1000
ST0100200030	1/4		5/8	1 1/2	1/4-20	100	1000
ST0100200040	5/16		7/8	2 1/8	5/16-18	50	500
ST0100200050	3/8		7/8	2 1/8	3/8-16	50	500
ST0100200060	1/2		1 1/4	3	1/2-13	25	25

HOLLOW WALL ANCHORS

(nylon body, carbon steel nail)



APPLICATIONS

- Pictures
- Lighting
- Shelves
- Cable Conduits to drywall
- Wood strips



ADVANTAGE

- Anti-Rotation lock
- Fast and easy instalation and removal
- Non-flamable fixing

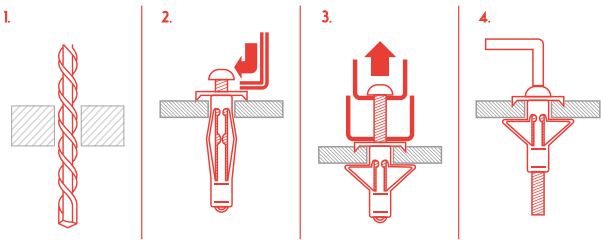
ANCHOR BAR MATERIAL

Carbon Steel - white zinc plating

BASE MATERIAL



INSTALLATION DRAWINGS



PRODUCT REFERENCE	ANCHOR DIAMETER	SCREW LENGTH	THREAD SIZE (UNC)	DRILL DIAMETER	WALL THICKNESS	BOX PACKING	CARTON PACKING
HW0100100010	1/8 XS	1 1/16	6-32	5/16	1/8 to 1/4	100	500
HW0100100020	1/8 S	1 3/4	6-32	5/16	3/8 to 1/2	100	500
HW0100100030	1/8 L	2 1/4	6-32	5/16	5/8 to 1	100	500
HW0100100040	1/8 XL	2 11/16	6-32	5/16	1 1/4 to 1 1/2	50	250
HW0100100050	3/16 S	2	10-24	3/8	3/8 to 5/8	50	250
HW0100100060	3/16 L	2 1/2	10-24	3/8	3/4 to 1 1/8	50	250
HW0100100070	3/16 XL	3	10-24	3/8	1 1/4 to 1 3/4	25	125
HW0100100080	1/4 S	2 1/4	1/4-20	7/16	3/8 to 1/2	50	250
HW0100100090	1/4 L	2 3/4	1/4-20	7/16	5/8 to 1 1/8	50	250
HW0100100100	1/4 XL	3 3/8	1/4-20	7/16	1 1/4 to 1 3/4	25	125

HOLLOW WALL SETTING TOOL

PRODUCT REFERENCE	DESCRIPTION	BOX PACKING	CARTON PACKING
HW0100200010	Setting Tool for all sizes of Hollow Wall Anchors	1	1



PLASTIC TOGGLE ANCHORS

(engineered plastic)



APPLICATIONS

- Electric Boxes
- Bathroom Accessories
- Smoke detectors and alarms
- Shelving
- Lighting Fixtures
- Mirrors



ADVANTAGE

- Pre-installation without screw
- Flush screw head against fixture
- One piece anchor for simple setting

BASE MATERIAL

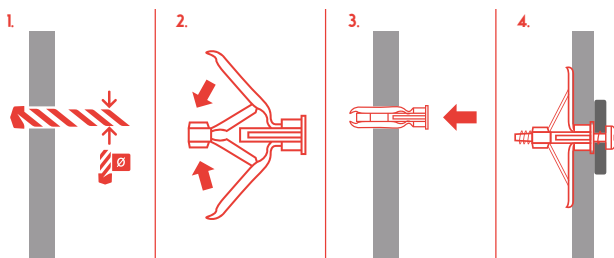


ANCHOR BAR MATERIAL

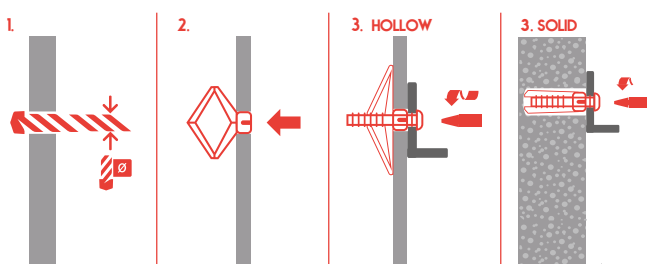
engineered plastic

INSTALLATION DRAWINGS

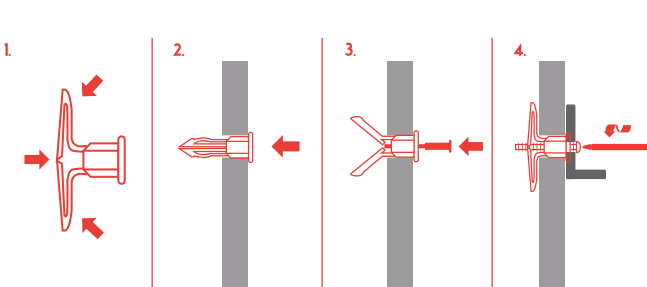
PTA1



PTA2



PTA3



PRODUCT REFERENCE	ANCHOR DIAMETER	WALL THICKNESS	DRILL DIAMETER	MIN. SCREW LENGTH	SCREW SIZE RANGE	BOX PACKING	CARTON PACKING



PLASTIC TOGGLE ANCHOR - PTA1

TA0100100010	Short	3/16 to 5/8	3/16 to 5/8	1 1/4	8 or 10	100	1000
TA0100100020	Medium	5/8 to 7/8	5/8 to 7/8	1 1/4	8 or 10	100	1000
TA0100100030	Long	15/16 to 1 1/4	15/16 to 1 1/4	1 9/16	8 or 10	100	1000



PLASTIC TOGGLE ANCHOR - PTA2

TA0100200010	Mini	1/8	5/16	1	6-12	100	1000
TA0100200020	Short	3/8	5/16	1 4/16	6-12	100	1000
TA0100200030	Medium	1/2	5/16	1 4/16	6-12	100	1000
TA0100200040	Long	5/8	5/16	1 1/2	6-12	100	1000
TA0100200050	Extra long	3/4	5/16	1 3/4	6-12	100	1000
TA0100200060	Super long	1	5/16	2	6-12	100	1000



PLASTIC TOGGLE ANCHOR - PTA3

TA0100300010	Short	1/8 to 1/4	5/16	1/8 to 1/4	6 to 14	100	1000
TA0100300020	Medium	3/8 to 1/2	5/16	3/8 to 1/2	6 to 14	100	1000
TA0100300030	Long	5/8 to 3/4	5/16	5/8 to 3/4	6 to 14	100	1000

GATOR NYLON ANCHORS

(engineered nylon)



APPLICATIONS

- Electrical Boxes/cabling
- Shelving
- Lighting
- Signage
- Plumbing Fixtures
- Cabinets



ADVANTAGE

- Through fixing
- Resistant to corrosion
- Works with large range of base materials
- Absorbs vibration to keep fixing in place

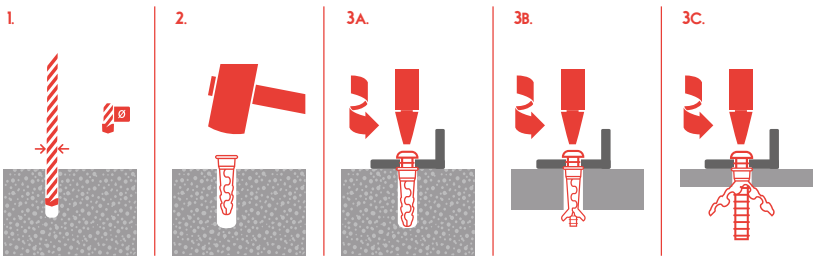
ANCHOR BAR MATERIAL

Engineered Nylon

BASE MATERIAL



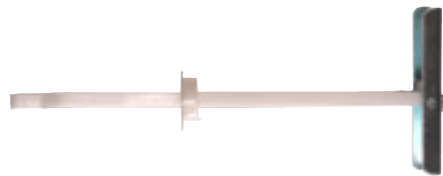
INSTALLATION DRAWINGS



PRODUCT REFERENCE	ANCHOR DIAMETER	MIN. WALL THICKNESS	DRILL DIAMETER	MIN. THREAD LENGTH	SCREW SIZE RANGE	BOX PACKING	CARTON PACKING
GA0100100010	1	1/4	3/16	1 3/16	#4 - #10	100	1000
GA0100100020	1 3/16	3/8	1/4	1 3/8	#6 - #12	100	1000
GA0100100030	1 5/8	1/2	5/16	1 13/16	#8 - #14	100	500

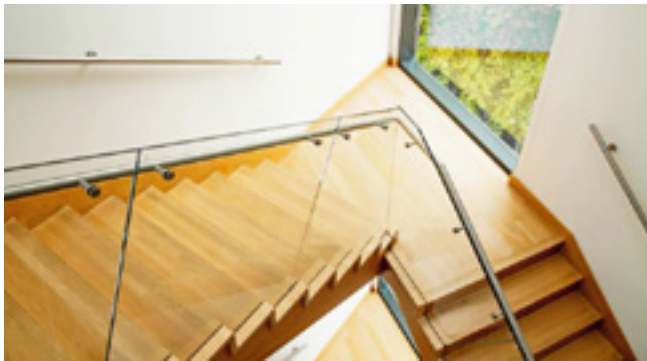
STRAP TOGGLE HTPA

(engineered plastic and carbon steel)



APPLICATIONS

- Heavy Duty Cavity Wall Anchor
- Ballustrade
- Kitchen cabinets.



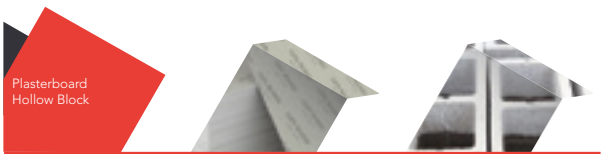
ADVANTAGE

- Fully adjustable for different wall thickness
- Re-usable
- Quick and easy installation
- No setting required
- Support up to 30kg

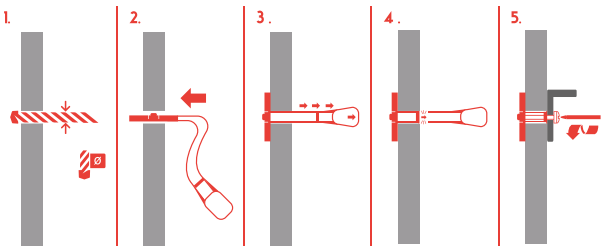
ANCHOR BAR MATERIAL

Engineered Plastic
with a Carbon Steel Wing

BASE MATERIAL



INSTALLATION DRAWINGS



PRODUCT REFERENCE	ANCHOR DIAMETER	ANCHOR LENGTH	DRILL DIAMETER	WALL THICKNESS	THREAD SIZE (UNC)	BOX PACKING	CARTON PACKING
TA0100400010	3/16	4	1/2	3/8 - 2 1/2	3/16 - 24	50	300
TA0100400020	1/4	4	1/2	3/8 - 2 1/2	1/4 - 20	50	300
TA0100400030	3/8	4	3/4	3/8 - 2 1/2	3/8 - 16	25	150
TA0100400040	1/2	4	3/4	3/8 - 2 1/2	1/2 - 13	25	150

HD TOGGLE ANCHORS

(carbon steel and nylon)



APPLICATIONS

- Heavy Duty Cavity Wall Anchor
- Ballustrade
- Kitchen cabinets



ADVANTAGE

- Self Drilling anchor
- Quick and Easy installation
- Various plasterboard thicknesses
- Wider fixing hold

BASE MATERIAL



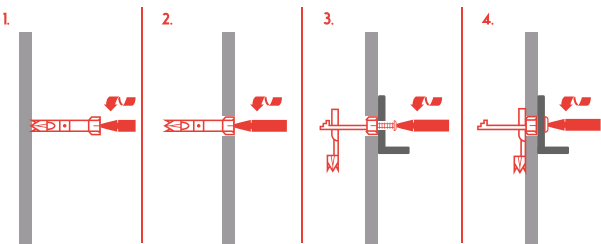
ANCHOR BAR MATERIAL

Carbon Steel - white zinc plating
Engineered Nylon

HEAVY LOADS



INSTALLATION DRAWINGS



PRODUCT REFERENCE	ANCHOR LENGTH	HOLD VALUE IN 1/2 DRYWALL	HOLD VALUE IN 1/2 CEILING	SCREW LENGTH	BOX PACKING	CARTON PACKING

METAL HD TOGGLE ANCHOR

TA0100500010	2 3/8	150 lbs	50 lbs	No.6 x 2 1/4	50	250
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PRODUCT REFERENCE	ANCHOR LENGTH	HOLD VALUE IN 1/2 DRYWALL	HOLD VALUE IN 1/2 CEILING	SCREW LENGTH	BOX PACKING	CARTON PACKING

NYLON HD TOGGLE ANCHOR

TA0100500010	2 1/8	100 lbs	50 lbs	No.6 x 2	50	250
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PLASTIC PLUGS

(nylon body, carbon steel nail)



APPLICATIONS

Reccomended for light duty static applications, such as:

- Shelving / small brackets
- Pictures
- Lightweight cupboards
- Lighting



ADVANTAGE

- Consistant performance in stated base materials
- Resistant to corrosion

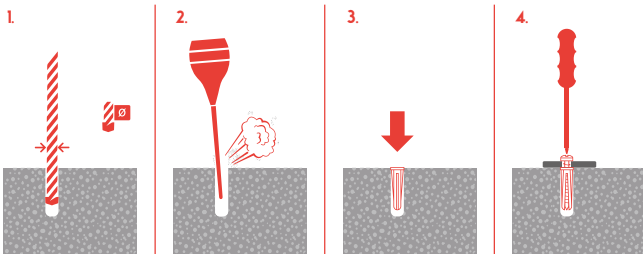
ANCHOR BAR MATERIAL

Engineered Plastic

BASE MATERIAL



INSTALLATION DRAWINGS



PRODUCT REFERENCE	ANCHOR DIAMETER	ANCHOR LENGTH	DRILL DIAMETER	FLANGE SIZE	BOX PACKING	CARTON PACKING
PP0100100010	#6 - #8	3/4	3/16	19/64	100	1000
PP0100100020	#8 - #10	7/8	3/16	19/64	100	1000
PP0100100030	#10 - #12	1	1/4	3/8	100	1000
PP0100100040	#14 - #16	1 1/2	5/16	7/16	50	500



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