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Dear customer,

For over 80 years the production of high tensile shackles has been our core business and competence. Dirk van Beest founded the Van Beest company in 1922, initially as a supplier of iron works to the dredging industry, which was strongly developed in the Sliedrecht area. From the very beginning, the company has been forging shackles. Its ironwork expertise gave the Van Beest shackle an edge over the competition and this was the start of a network of professional users that now stretches across the globe. In 2007 Van Beest acquired the brand **EXCEL**[®]. Under this brand grade 8 and grade 10 lifting hooks are produced in our French factory. The designs and quality standards of our products are the result of requirements put forward over the years by our customers in markets throughout the world. Our shackles are marked **Green Pin**[®], our hooks **EXCEL**[®], we are the sole proprietors of these two brands.

Production

At Van Beest we were faced with a labour-intensive production unit. Over the years Van Beest invested, with its own engineers, in the development of a production line of high quality output. The highly automated machines in our two factories are custom built to Van Beest's requirements and thus to those of our customers.

The same technicians demand the quality of the products during production and therefore guarantee quality to our customers. Each individual **Green Pin**[®] shackle or **EXCEL**[®] hook is marked with the steel grade and a traceability code. But quality is not only a matter of the product itself, it stretches across the entire organization. Since 1993 our company has been ISO certified by Lloyds; currently we are ISO 9001:2008 certified.

Accessories

Our products are used by professionals in many different environments such as the offshore industry, naval construction, the fishing industry, mining, and general industry, to mention just a few. The **Green Pin**[®] shackle or **EXCEL**[®] hook is usually the final connection, and to serve our customers best, we have added a wide range of other steel wire rope and chain accessories which complement our full range of high quality products. These accessories are engineered by Van Beest and carefully sourced from certified suppliers to ensure they represent the same high quality performance as our own products.

Distribution

Both our **Green Pin**[®] shackles and **EXCEL**[®] hooks are inspected and stored at our main warehouse in Sliedrecht, 30 km from Rotterdam, where we offer our wide range of products from stock. Rotterdam is the main seaport to Europe inbound and has sailing connections to all the major business centres across the world outbound.

Storage efficiency is optimized by the latest computer software, enabling us to make maximum use of our storage facilities. A customer order can be shipped from our warehouse within 4 hours from placing the order. Additionally, wholesalers throughout the world maintain stocks of our **Green Pin**[®] shackles and **EXCEL**[®] hooks in order to serve their own target markets best. In over 80 countries worldwide **Green Pin**[®] shackles and **EXCEL**[®] hooks are available from storage at our various distributors. We will be pleased to advise you of the **Green Pin**[®] or **EXCEL**[®] supplier nearest to you to obtain supplies.

We trust this catalogue will be a helpful business tool for you and that it will assist you in serving your customers' needs. In addition, our skilled salespeople and technicians are always at your service. Please do not hesitate to contact us for any question related to shackles, hooks or other wire rope and chain accessories in general.

We are convinced that with the full range of our products and services you have found an excellent source that enables you to meet your needs in the global marketplace.

Kind regards,

C. Boer
Managing Director

R.M. Meer
Vice President Sales

PS: For general business terms and conditions see page 90



Van Beest B.V., manufacturer and supplier of wire rope and chain fittings.
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Chamber of Commerce Rotterdam - nr. 23009317. All our offers and contracts are subject to our General Conditions of Sale as registered with the District Court in Dordrecht on November 15, 2007 under number AL 31/2007.



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EXCEL[®]



We reserve the right to make amendments on specifications mentioned in this catalogue without prior notification.
Specifications show general compliance with the various standards and should not be taken to meet all terms of the contract or purchase order.

Chamber of Commerce Rotterdam, Registration Number 23009317
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General

In case you do not use the products yourself but are reselling these as a part of a product manufactured by yourself, please take our general cautions and warnings into account and make these known to your customers as well. In any case, we do not accept any responsibility or liability, nor can we be held responsible for any misuse or damage with, by or at your customers due to negligent use.

Definitions

Material

For the production of hooks and other lifting devices, different raw materials are used, depending on the use of the finished product. For hooks for example, depending on the specific use, the following raw materials can be applied:

- alloy steel, quenched and tempered, which is comparable to grade 8
- alloy steel, quenched and tempered, which is comparable to grade 10
- stainless steel AISI316L or AISI316, which is comparable to grade 5

Load

Following terms are used to define a load:

- Working Load Limit or WLL: the maximum load the product is designed to support, in general use and in a straight pull.
- Proof Load or PL: this is the load applied on proof testing the product. At this load the product may not show visual deformation. For further specific information as to the proof load applied, we refer to the separate paragraph on testing.
- Minimum Breaking Load or MBL; the minimum load at which the product may fail or no longer support the load. Where applicable the details on the MBL are given specifically for each product range, at the beginning of each chapter.
- Shock Load: a load resulting from a very rapid application of the load on the product. Shock loads are to be avoided in practice since these increase the stress on the product significantly and may affect its product life.

The unit that is used in this catalogue to indicate WLL, PL and MBL is the metric ton (t).

Safety factor

This factor gives the ratio between the Minimum Breaking Load and the Working Load Limit.

For the standard range of EXCEL® hooks for example, the safety factor is 4:1, meaning that the hook may only break once it is overloaded by a factor of at least 4 (4 times its designed Working Load Limit).

Product dimensions

All product dimensions in this catalogue are nominal dimensions. Product design, materials and/or specifications can be subject to alterations without prior notification.

Finish

Products in this catalogue are self coloured or painted in a specific colour after production. Stainless steel products are polished.

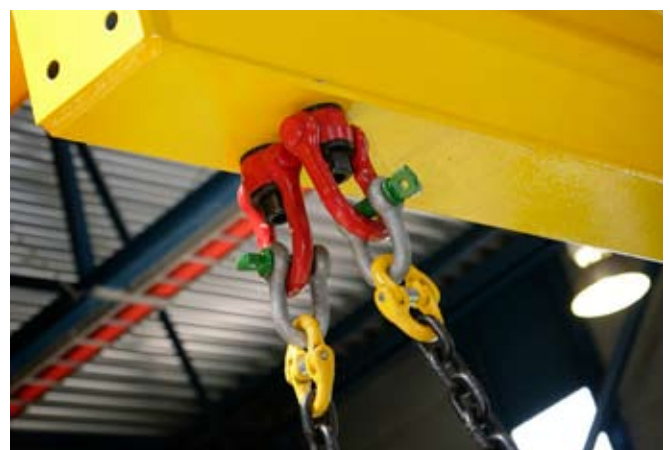
Standard

These refer to the specific standards indicated for the product.

Temperature range

This indicates the temperature range at which the product can be used.

Beyond the advised temperature range the WLL of a product may be affected.



Certificates

Depending on the type of product and certificate availability for a certain product, following certificates are used in this catalogue:

- works certificate in accordance with EN 10204 - 2.1 or 2.2;
- material certificate in accordance with EN 10204 - 3.1;
- manufacturer test certificate;
- EC Declaration of Conformity in accordance with annex IIA of the machine directive 2006/42/EC and the latest amendments;
- inspection certificate in accordance with EN 10204 - 3.2;
- proof load test certificate;
- certificate with the actual breaking load experienced on tested samples.

Please refer to the relevant product chapter for further details on certificates.

On request we can test under supervision of a classification bureau like LROS, DNV, BV, ABS etc.



Testing

Generally the proofloads for grade 8 products are as per following table and certificates can be supplied upon request. For further conditions on certificates, please consult the general price list.

Diameter		Working Load Limit (WLL)	Proof Load (PL)	Minimum Breaking Load (MBL)
inch	mm	t	t	t
3/16	5	0.8	2	3.2
7/32	6	1.12	2.8	4.48
1/4	7	1.57	3.93	6.28
5/16	8	2	5	8
3/8	10	3.2	8	12.8
1/2	13	5.4	13.5	21.6
5/8	16	8.2	20.5	32.8
3/4	20	12.8	32	51.2
7/8	22	15.5	38.75	62
1	26	21.6	54	86.4
1 1/4	32	32.8	82	131.2

The WLL figures given correspond to WLL for chains for use in chain slings.



General cautions and warnings

All Working Load Limits (WLL) indicated in this catalogue or in other Van Beest literature or publications are only applicable to recently supplied, new and unused products, which are used under normal conditions.
Should extreme circumstances or shock loading be applicable, this must be taken into account when specifying the products to be used.

The Working Load Limit should be applied in a straight pull and overloads should not be applied. Side loads should be avoided, as the products are not designed for this purpose and the application of a side load may significantly decrease the product life.
The Working Load Limit for the product corresponds to static use. In case of dynamic use (breaking, accelerations, shocks), the effective stress on the product increases significantly which can lead to product failure.

It is required that the products are regularly inspected and that the inspection should take place in accordance with the safety standards given in the country of use. This is required because the products in use may be affected by wear, misuse, overloading etc. with a consequence of deformation and alteration of the material structure.
Inspection should take place at least every six months and even more frequently when the products are used in severe operating conditions. In accordance with our on-going policy to improve our products, some dimensions or product markings may differ from those stated. The characteristics mentioned in this catalogue or in other Van Beest literature or publications are given merely as an indication. Van Beest reserves the right to make all suitable modifications to any product, even after acceptance of the customer order. In any case, the essential characteristics and performances of the products shall not be negatively affected by such modifications. Any dimension considered to be critical should be verified with our engineering department.

Verification before first use

Before first use of the chain sling it should be ensured that:

- the chain sling is precisely as requested and ordered
- the valid manufacturer certificate and EC declaration are at hand
- the identification and the working load limit mentioned on the sling correspond to the information given on the certificate
- full details of the chain sling are recorded (components, diameter, number of legs, angle, grade) in the register of lifting equipment
- the users of the sling have received appropriate instruction and training

Verification before each use

Before each use the chain sling should be visually inspected for obvious damage or deterioration (refer to warning about each component or chain). If faults are found during this inspection, the sling should be withdrawn from service and referred to a competent person for thorough examination. Some parts can be replaced or the complete sling can be discarded.

A thorough inspection should be carried out by a competent person at intervals not exceeding six months and even more frequently when the slings are used in severe operation conditions. Records of such inspections should be maintained.

Chains slings should be thoroughly cleaned to remove any oil, dirt, rust prior to inspection. Any cleaning method which does not damage the material is acceptable. Methods to avoid are those using acids, overheating, removal of metal or movement of metal which may cover cracks or surface defects.

The chain sling should be inspected throughout its full length to detect any evidence of wear, distortion or external damage.

Any replacement component or part of the chain sling should be in accordance with the appropriate European Standard or the safety standards given in the country of use for that component or part.

With chain slings, if any chain link within the leg of a chain sling is required to be replaced then the whole of the chain within that leg should be renewed. The repair of chain in a welded chain sling should exclusively be carried out by the chain manufacturer using the adequate welding process. Components showing any defect should be discarded and replaced.

Where repair is carried out by replacement of a mechanically assembled component, proof testing is not required providing that the component has already been tested by the manufacturer in accordance with the relevant European Standard.

Handling of the load

- It is important to check the chain sling before lifting and also to check the load itself too. Check if there are any specific instructions provided for the lifting of the load (given by the manufacturer of the load). Before starting the lift, it should be ensured that the load is free to move and is not bolted down or nothing could fall from the load. The path between the previous location and the new one must be free.
- The weight of the load must be known in order to select a sling with the correct working load limit. If the weight of the load is not marked, the information should be obtained from the consignment notes, manuals, drawings or assessed by calculation.
- The position of the centre of gravity of the load should be established in relation to the possible points of attachment of the chain sling. To prevent any tilting or toppling, the following conditions should be met:
 - for single leg and endless chain slings the attachment points should be directly above the centre of gravity.
 - for two leg chain slings the attachment points should be on either side of, and above the centre of gravity.
 - for three and four leg chain slings the attachment points should be distributed in a plane around the centre of gravity.
 It is preferable that the weight distribution should be equal and that the attachment points are above the centre of gravity.

When using two-, three- and four-leg chain slings the attachment points and chain sling configuration should be selected to achieve angles between the chain sling legs and the vertical within the range marked on the chain sling. In any case the angle β , which is the angle between the chain sling leg and the vertical, should not exceed 60°. More details concerning load reductions at certain angles can be found in the relevant tables corresponding to the grade.

Ensure that the load to be moved is able to resist both the vertical and horizontal force without being damaged.

The hook connected to the chain should be directly above the centre of gravity.

- A suspended load should not be left unattended.
- If a multi leg chain sling is not used for the purpose for which it has been designed, for example a lift with less legs than the number of legs of the chain sling, the WLL should be reduced from that marked on the chain sling by applying the relevant factor given hereunder:

Types of chain sling	Number of legs used	Factor to apply to marked WLL
Two-leg	1	1/2
Three- and four-leg	2	2/3
Three- and four-leg	1	1/3

- In any case, the chain sling should have a WLL equal to or greater than the weight to be lifted.
- Riggers should be aware of the risks and dangers of shock loading which may break the chain. The load should always be lifted and lowered slowly.

Method of connection

A chain sling is usually attached to the load with endfittings such as hooks and/or links.

The components should be used for straight in line loading only, this in order to avoid bending.

The lifting points fixed on the load should be seated well down in a hook (never on the point or wedged in the opening).

We refer to the detailed warnings of each component in the product chapters.

Symmetry of loading

The working load limit values mentioned in our catalogue for each grade have been determined on the basis that the loading of the chain sling is symmetrical. This means that when the load is lifted the chain sling legs are symmetrically distributed in the plane and all legs of the chain sling have the same angles to the vertical.

Refer to EN818-6:2000+A1:2008 for more details.

The loading can be assumed to be symmetric if all of the following conditions are met:

- the load is less than 80% of marked WLL and
- chain sling leg angles to the vertical are all more than 15° and
- chain sling leg angles to the vertical are all within 15° to each other and
- in the case of three- and four- leg chain slings, the plane angles are within 15° of each other.

If one of the above parameters is not met than the loading should be considered as asymmetric and the lift should be referred to a competent engineer to establish the safe rating for the chain sling. Alternatively, in the case of asymmetric loading, the chain sling should be rated at half the marked WLL.

If the load tends to tilt, it should be lowered and the attachments changed (by repositioning the attachment points or by using compatible shortening devices).

Despite the safety factor of 4 or 5, never exceed the given working load limit (WLL).

Safety of lift

Hands and other body parts should be kept away from the chain to prevent injury.

The load should be lifted slowly until the chain is taut. As soon as the load is slightly raised, a check should be made that it is secure and has the position intended. Reference should be made to ISO 12480-1 for planning and management of the lifting operation and the adoption of safe systems of working. Never move the load during the lift over people.

Lowering the load

The point of destination of the load should be prepared and should be adapted to the weight and the load shape. The access to this site must be clear of any unnecessary obstacles and people. The load should be lowered carefully. Avoid trapping the chain sling beneath the load as this may damage it. Before allowing the chain to become slack, the load should be checked to ensure that it is properly supported and stable. Then the chain sling should be removed by hand and not with the lifting device.

The load should not be rolled off the chain sling as this may damage the chain sling.

Storage of chain slings

When not in use chain slings should be kept on a properly designed rack. They should not be left lying on the ground where they may be damaged.

If the chain slings are to be left suspended from a crane hook, the chain sling hooks should be engaged in an upper link to reduce risk of chain sling legs swinging freely or snagging.

If the chain slings are out of use for some time they should be cleaned, dried and protected from corrosion, e.g. lightly oiled.

Maintenance

The conditions of use of the chain slings may affect their safety. It is necessary therefore to ensure, as far as is reasonably practicable, that the chain sling should be safe for continued use.

If the tag identifying the chain sling and its working load limit becomes detached and the necessary information is not marked on the sling, the chain sling should be withdrawn from service.

A competent engineer should examine it by observing following:

- The chain sling markings are legible, i.e. information on the chain sling identification and/or the working load limit
- Distortion of the upper or lower end fittings
- Chain stretch and wear

If any parts should be replaced, like the load pin or the latch of a hook, only use the original spare kits of EXCEL®.

As soon as a load pin is misused or damaged or distorted, it must be replaced by the correct EXCEL® spare kit.

Limitations in use

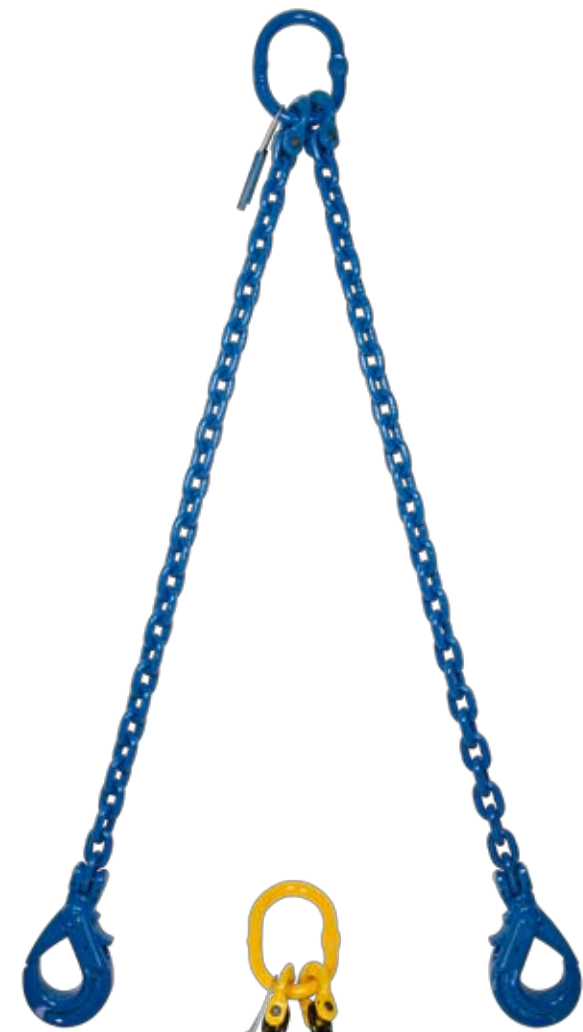
- Never modify by welding or heat treating or grinding or any other process the components or the chains. It could alter their mechanical and/or chemical characteristics
- Consult the manufacturer of the components and the chains if the chain sling is to be exposed to highly concentrated chemicals. The EXCEL® parts must not be used under chemical influences such as acids or alkaline solutions.
- The rating of lifting accessories in European Standards assumes the absence of exceptionally hazardous conditions. This concerns offshore activities, lifting of persons and lifting of potentially dangerous loads. In such cases the degree of hazard should be assessed by a competent engineer and the working load limit adjusted accordingly.
- If extreme temperature situations are applicable, the following load reduction must be taken into account:

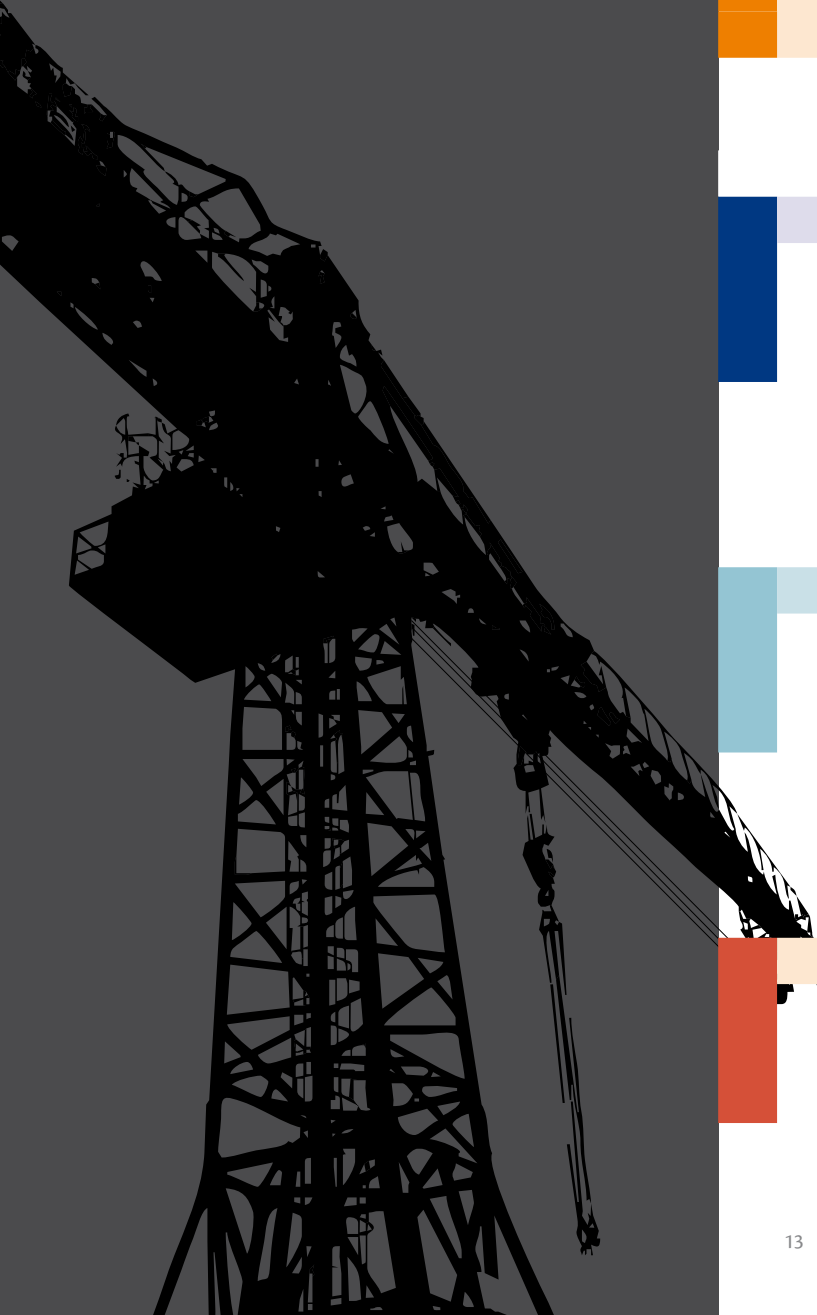
Temperature		Reduction for elevated temperatures New Working Load Limit
°Celsius	°Fahrenheit	
up to 200 °C	up to 392 °F	100 % of original Working Load Limit
200 – 300 °C	392 – 572 °F	90 % of original Working Load Limit
300 – 400 °C	572 – 752 °F	75 % of original Working Load Limit
> 400 °C	> 752 °F	not allowed

The use of chain slings within the permissible temperature range in the above table does not require any permanent reduction in working load limit after the chain sling is back to normal temperatures. In the case of accidental exposure to excessive temperatures, the chain sling should be withdrawn from service.

Conversion factors

To convert from	to	multiply by
Length		
mm	inch	0.0393701
inch	mm	25.4
Mass		
US tons	metric tons	0.9071847
metric tons	US tons	1.1023113
metric tons	pounds	2204.6226218
pounds	metric tons	0.0004536
metric tons	kilogram	1000
kilogram	metric tons	0.001
metric tons	kilo Newton	9.8066500
kilo Newton	metric tons	0.1019716
pounds	kilogram	0.4535924
kilogram	pounds	2.2046226
Torque		
Newton meter	foot pound-force	0.7375621
foot pound-force	Newton meter	1.3558180





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Lifting eyes	28
Swivels	40
Webbing components	44
Spare parts	48

Grade 10 products	54
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Stainless steel products	66
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Lashing	80
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