

OBO

Information for employees and business friends of the Bettermann group | Issue 1/2002

New harvest 2002



Fresh innovations and many optimised products



Fresh innovations and many optimised products



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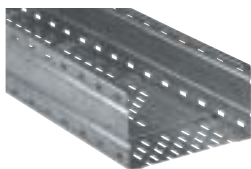
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**Dear
business partners,
dear employees**



“The new
harvest is here”

Surveys of the electrical industry are inclined to produce mixed results at present. In fact it seems as if some fields in our sector are lying fallow and cannot be cultivated properly.

We at OBO Bettermann have not been discouraged by this. We plan to surprise you with fresh innovations and many improved products in this OBO Blick on Light + Building 2002.

After a wintry season in the economy, we feel a particular obligation towards our customers and the installers – who help to harvest our products – to create emphases and so to give new impulses in the market.

We “farmers” know that monocultures are susceptible to all kinds of pests. The common “price aphid” or the cunning “copper weevil” are only a couple of examples. Which is why at OBO Bettermann we

have produced substantial innovations in all our system areas, ranging from a new kind of finishing method to an installation technology which has been awarded several design awards.

So now let us enjoy the fruits of our labour together!

Yours,
Ulrich L. Bettermann



Management OBO Bettermann, 2002 from left to right: Wilfried Kentenich, Andreas Bettermann, Ulrich L. Bettermann, Markus Arens, Werner Dunker

OBO Bettermann approaches the future ...

... and is always there for you

"Think and act opportunities!" is one of the most important mottoes at OBO Bettermann. So short decision paths, flat hierarchies and constant concentration on customers and products are at the centre of our operation. The following personnel changes effective from 1 January 2002 are an important step in this direction.

Mr Andreas Bettermann, shareholder and previously head of the Marketing division has been appointed managing director of OBO Bettermann. He will take over the tasks of the corporate marketing management. Marketing in Germany has been expertly looked after by **Mr Hans-Dieter Bausen** at the head office as authorised signatory since 1 January 2002. The team in Germany is reinforced by **Mr Jürgen Korte** and, for transient voltage and lightning protection systems in particular, by **Mr Andreas König**.

In the OBO BETTERMANN Projekt und Systemtechnik GmbH division **Mr Antonius Geise** has been authorised signatory and responsible for the technically demanding project business with engineering since 1 January 2002.

Mr Geise is supported specifically in the field of cable routing and underfloor systems by **Mr Dieter Beckmann**.

For the export business **Mr Rolf Barczewski** is authorised signatory with worldwide responsibility, together with our area sales managers and the managing directors of the subsidiaries.

As managing director for the corporate planning and control division, **Mr Markus Arens** will continue to support all marketing activities and will of course also be available to our customers.

We are particularly pleased to report that **Mr Wilfried Kentenich**, formerly authorised signatory for OBO Bettermann, has been appointed managing director for the Technology division since 1 January 2002.

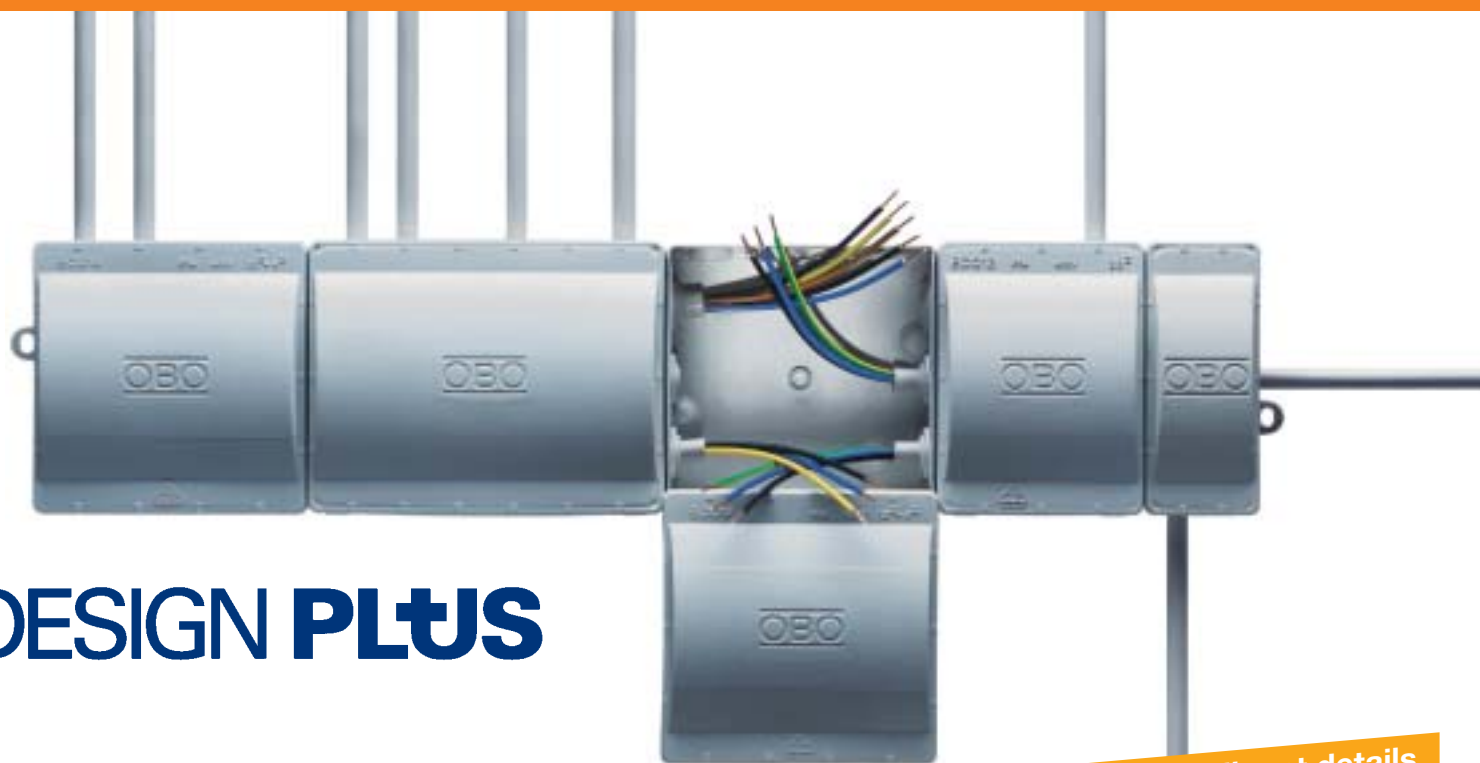
With these staff changes OBO Bettermann has taken a broad strategic view in establishing a decisive foundation for future customer-oriented market prospecting and demand-dependent production.

E-CHECK Safety Days 2002

In an unprecedented national campaign more than 11,000 E-CHECK specialist firms were challenged in the period from 29 April to 10 May 2002 to demonstrate their competence on the spot

and to place safety themes at the centre of their message to customers. As an E-CHECK partner firm OBO Bettermann is supporting this campaign particularly lavishly with comprehensive information articles, a professional action plan and a sophisticated range. The focus of this campaign is on the prospecting of new target groups in the light industry sector and highlighting competence in the areas of fire, lightning and surge protection and safety in electrical installation.





DESIGN PLUS

with many intelligent details

The new OBO junction boxes of the ECO Series

Many intelligent details for faster, more convenient and more cost effective installation – that is what the new OBO junction boxes of the ECO Series have to offer.

Example one: the self-sealing cable entries. A particularly secure and convenient solution. The entries can be cut off from inside in two stages. In addition there are also two cable entries that can be cut off from outside.

Example two: condensation openings, which can be opened from the bottom of the box simply by cutting off.

Example three: the terminal block fixing, which allows the terminal block to be rotated through 360 degrees.

Example 4: brackets that can be fixed quickly and easily with 6 mm hammerfixes. Slotted holes facili-



tate precise alignment of the boxes.

Example 5: the rounded cover, which is simply attached to one of the lower corners of the bottom section and provides space where it is needed during installation – in the centre.

The ideal dimensions of the box – large inner space in spite of low side walls – are another plus point in terms of ease of assembly. Other features are the clear labelling area, which has space for individual

labelling, and the clear markings for the cable entries. The engineer can immediately see in which positions cable entries are still free, even in poorly accessible corners.

The new ECO junction boxes can also be handled in a group. They are the first junction boxes that can be connected to each other very simply without further components. That saves both double the time and also materials, as the second box does not have to be fixed separately. Another advantage: enhanced stability thanks to the double-walled sides.

And particularly pleasing for the installer: he can benefit from the numerous advantages of the products in the new OBO ECO series without paying more than for other comparable products.

Totally metric, totally practical: The OBO V-TEC VM cable glands

The quickest and most convenient way of providing strain relief and tightness with cable glands on junction boxes is with the new V-TEC VM cable glands from OBO.

With the integrated sealing lip and the special OBO lamella technology, protection class IP 68 is achieved. Strain relief and tightness have been tested to DIN EN 50262.

The connecting threads of the cable glands are metric and are therefore suitable for universal use.

Once screwed in place the fitting is there for ever, as the optimum thread adjustment with the right pitch ensures permanent resistance to shaking.



The cable glands are available in light grey, silver grey and black – ideal for labelling and distinguishing of different functions.

OBO also offer more top-class features in the material: the cable glands are made of high-quality, halogen-free polyamide 6.

Well protected: modern cap nut construction
The self-locking thread makes the screw connection shake-proof.

Snapping on, not snapping off: The OBO locking clip

Something new for individual cable fixing, too: the OBO locking clip is an example of this, and means that an entirely new method of fixing and laying is now possible.

The locking clip is particularly suitable for hard, problem surfaces such as concrete, tiles/full brick and sand-lime brick.

All operations can now be carried out very simply:

Simultaneously: insertion and locking in.
The locking clip makes a new, faster installation sequence possible: drill all the holes, insert all the locking clips, then lay in the cable and lock it in quick succession.

1. Drill all holes
2. Insert all locking clips
3. Insert cable and lock at the same time

OBO's patented system is as simple as it could be – errors are virtually excluded. And the locking clip

can be opened again at any time with a screwdriver.

The locking clip makes electrical installation just that bit simpler and quicker – typical of OBO.

Usability Study



New design and new sizes: The Junior-Quick clips

Ready for use: the new Junior-Quick clips type 2950 in sizes M40, M50 and M63. They are presented in an improved design, with the

same load capacity as the Quick clips of type 2955. Another advantage is that they can be used in conjunction with all the other

Junior-Quick clips, Multi-Quick clips and in future also with the starQuick clips.

A real innovation of the new Junior-Quick clips are the round edges on the clip opening. These not only make for an attractive design, but also guide the clip into the right position when the pipe is pushed in.

Particularly pleasing: the price of the clip will remain stable, in line with that of the existing Junior-Quick clips.



One for all: The OBO multi-purpose anchor

Anchors have been around for decades, and to be honest they haven't changed very much in all those years – until now. The new OBO multi-purpose anchor is truly a real innovation – it is many anchors in one.

The difference from traditional anchors is evident even at first sight: the body of the anchor has a variety of sizes of shank sections. The top one corresponds to the maximum anchor diameter, the bottom one to the minimum diameter.

There is only one anchor for the standard fixings for drill hole diameters 6 mm, 7 mm and 8 mm. If a 6 mm hole has been drilled the lowest anchor shank fits into it perfectly. When the anchor is pushed further into the drill hole, the upper

anchor shank contracts and fits itself to the smaller hole diameter – in that case, for example, a 4 mm screw can be used. In an 8 mm hole the entire anchor fits in exactly. In that case a 6 mm screw is used, which expands the lower anchor shank.

This means that one anchor can be used for different hole diameters. This is not only an advantage in practice, say if a hole has opened up and a thicker screw is suddenly needed for fixing. It also rationalises supplies: you need fewer different packs.

The new OBO multi-purpose anchor is available in two different sizes. They are made from high-quality halogen-free polyamide and are an example of how even small things can improve efficiency.

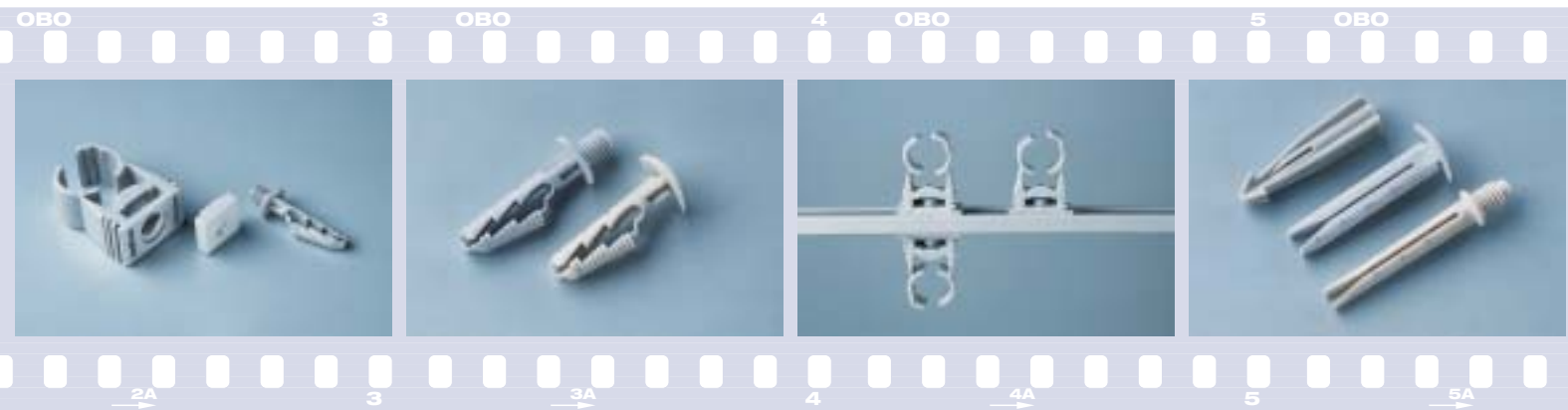
Usability Study



Typical: The anchor body with different sizes of shank sections – fits all standard drill hole diameters

OBO's top stars:

starQuick



starQuick is a comprehensive range of high-quality clips, which are particularly suitable for use outdoors, in public areas and in multi-storey car parks or under bridges and on exposed steel structures. They are unaffected by environmental influences. The clips are made of a UV and weather-resistant polyamide.

The series, with a total of 13 different sizes and a clamping range of 10 – 65 mm, makes possible problem-free support of all kinds of pipe systems. starQuick can hold both plastic and metal pipes, so is suitable for electrical and for sanitary systems. The clips can be fitted on the wall or on the ceiling. Fitting is amazingly quick and uncomplicated – even without tools.





Installation of several pipes is very simple:

- by stringing together individual clips,

- by using the double holder, to guarantee secure holding and spacing under a high load,

- by attaching rails for a free choice of distances and number of clips.

starQuick is reliable and can withstand high loads. A patented safety system ensures that the pipes remain permanently in their place. The pipe is held securely by the encircling closed clip.

Another big hit: The OBO pressure clip

The quicker, the better – this also applies to the installation of intermediate ceilings and partition walls. That is why we have not only

changed the design of our pressure clip, but also its function. As before, assembly is very simple using the M6 hammerfix. A new feature is

the striking surface on the top, which guarantees high striking accuracy in the hammer-drive screw. After assembly the cables are passed under the clips in a “lasso technique” hand movement – and that’s all there is to it.

Of course the pressure clip is made from high-grade polyamide – after all, you can always expect only the best from OBO.



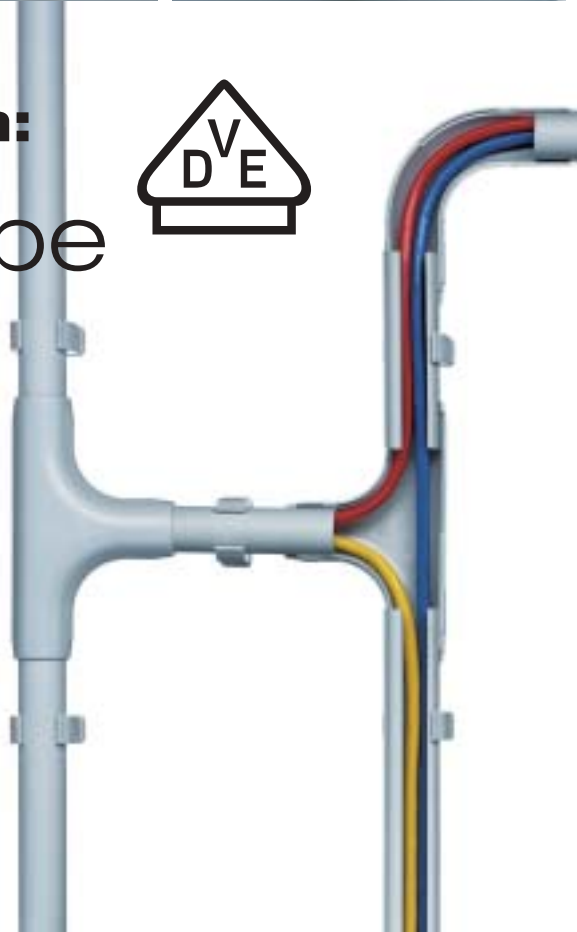


Ingenious locking system: The OBO Quick-Pipe system

Quick-Pipe combines the advantages of cable duct and installation pipe in an intelligent system. It allows clean and reliable surface installation of all kinds of cables on the wall and ceiling, including 230 V cables, data cables, fibre-optic cables, coax cables and telephone cables.

Quick-Pipe offers a whole range of convincing advantages over the installation pipe and cable duct.

Insertion of the cable is definitely easier: laborious threading in is eliminated. Retrofitting is always possible without problems – in fact it is even simpler than the first installation. Data cables can be fed in very easily, as can pre-assembled cables with plugs fitted. Unlike the cable duct, the Quick-Pipe has only a few support points, so it is ideally suited for uneven surfaces. It consists of only one part, which is made up from two materials: a rigid



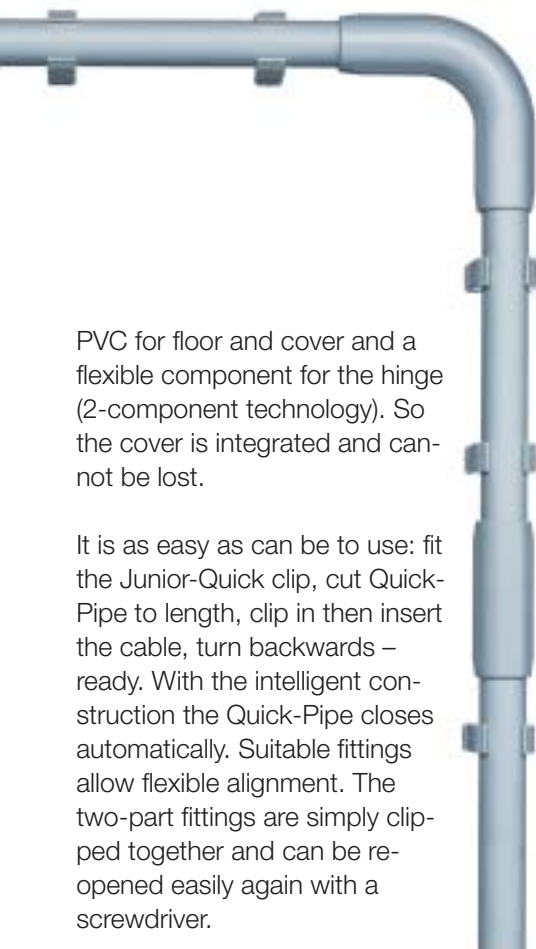
Multi-Quick ME: The OBO clip for all purposes

This is a clip for all purposes: the OBO Multi-Quick ME covers the whole range of pipe diameters from 16 to 32 mm with only three sizes. Until now this range required seven different clip sizes. And the best bit: it doesn't matter whether you are still using the existing Pg pipes or whether metric dimensions are already in use – the OBO Multi-Quick is always right!

But in view of the conversion from Pg to metric sizes, the name of the product has been changed. The former Multi-Quick is now called Multi-Quick ME.

It retains the product advantages of the OBO Multi-Quick, such as lightning fast release and automatic locking, practical slotted holes for

problem-free alignment of the clip when mounted on the wall or ceiling and also ease of insertion and adjustment of the pipes thanks to the optimally shaped holding arms. The Multi-Quick is also impressive for its high holding power and optimised user-friendly design. And of course the reduction to only three types of clip makes things even easier for the installer: simplified stock-keeping for example and a better idea of quantities.

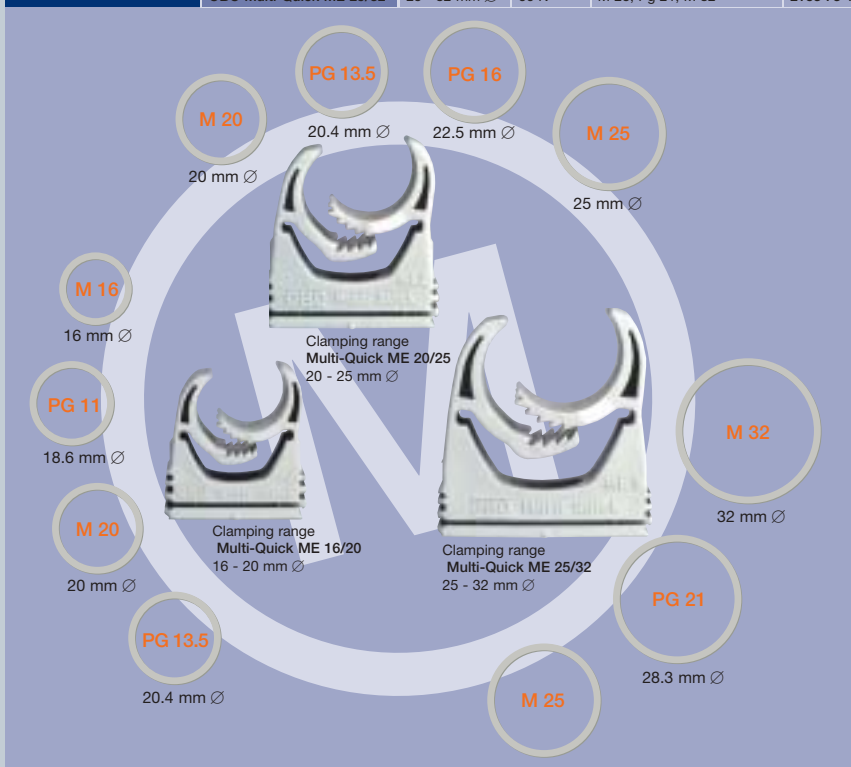


PVC for floor and cover and a flexible component for the hinge (2-component technology). So the cover is integrated and cannot be lost.

It is as easy as can be to use: fit the Junior-Quick clip, cut Quick-Pipe to length, clip in then insert the cable, turn backwards – ready. With the intelligent construction the Quick-Pipe closes automatically. Suitable fittings allow flexible alignment. The two-part fittings are simply clipped together and can be re-opened easily again with a screwdriver.

Quick-Pipe is available in four metric sizes: M16, M20, M25 and M32. It is supplied in lengths of 2 m. The system is VDE-tested and achieves protection class IP 44. The fittings – T-piece, connection sleeves and 90° bends – are part of the system. Quick-Pipe is also available in pure white – and is also visually pleasing to demanding installers and clients.

A comparison of all OBO Multi-Quick ME sizes.	OBO Multi-Quick type	Clamping range	Max. load	Pipe sizes	Order No.
	OBO Multi-Quick ME 16/20	16 - 20 mm ∅	40 N	M 16, Pg 11, M 20, Pg 13.5	2153 71 8
	OBO Multi-Quick ME 20/25	20 - 25 mm ∅	60 N	M 20, Pg 13.5, Pg 16, M 28	2153 72 8
	OBO Multi-Quick ME 25/32	25 - 32 mm ∅	60 N	M 25, Pg 21, M 32	2153 73 4



Strike power: Holds in any kind of masonry

The OBO Nailfix

To help you to fix cables in wall channels and to masonry more conveniently and securely prior to plastering, we have remodelled and optimised the OBO Nailfix.

The OBO Nailfix is suitable for almost all backgrounds except for concrete, including hard sand-lime brick and tiles. To ensure better adhesion of plaster, the plastic cover has "plaster holes". An optimum ratio between bending angle



and hardness ensures that the nails do not break.

The Nailfix is variable and adapts to the cable. Laying in narrow passages is no problem with OBO-Nailfix, as it can be turned through 90°.

Fixing pins make it easy to guide the cable under the cover, even after the OBO Nailfix has been hammered in.

The OBO Nailfix: another quality product from OBO to simplify electrical installation – and naturally halogen-free.

Full adhesion:
The holes in the fixing cover ensure optimum adhesion of plaster.



Junction box OBO B9/T:

Unlimited applications

A universal problem-solver, which can be used virtually anywhere. Even in permanently wet positions. B9/T is the unspectacular name of this all-purpose junction box from OBO, which can claim protection class IP 67.

The B9/T junction box consists of two plastic components, a soft one for the seal and a hard one for the housing. The result of this dual plastic technology is perfect tightness and stability.

But there are even more advantages to this junction box. They include, for example, the soft membrane, which can be perforated directly by the cable without any other

tool and seals automatically, as well as the anti-rotation cams, which ensure precise positioning and facilitate accurate and secure fitting to all backgrounds.

The fixing holes in the junction box are provided with a soft component, which holds the fixing screws to achieve the protection class. Maximum stability and distortion resistance is guaranteed by the



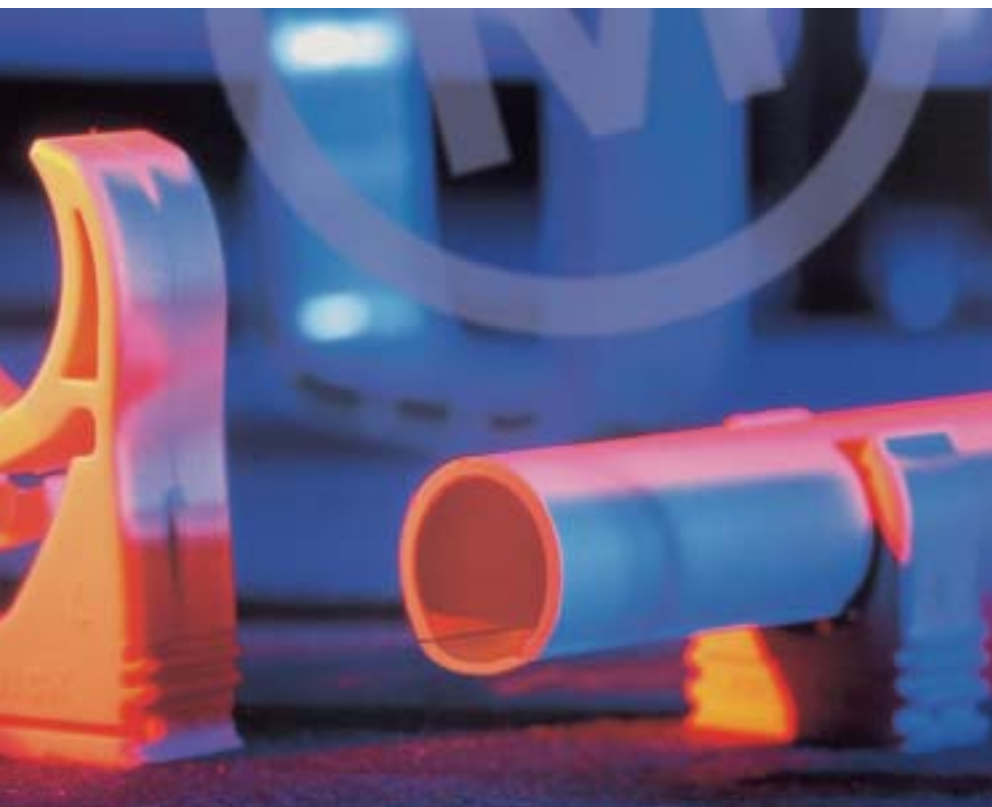
lower section in fibreglass-reinforced polypropylene with its double outer wall.

Other features of the B9/T are the terminal strip which can be rotated through 360° and the smooth outer walls, which allow several boxes to be lined up without spaces between them – even with retrofitting.

The OBO junction box has of course been thoroughly tested, as can be seen at a glance from the lid. Here you will find test marks such as VDE, CEBC and KEMA KEUR.

PG becomes “metric”:

OBO facilitates conversion with clear labelling and type list



The Europe-wide standardisation of dimensions and sizes has not passed the electrical industry by. The most important changes in this area include the conversion of the Pg system, which is mainly used in Germany, to the internationally standard metric system.

It must be said that the conversion implemented last year has led to a considerable simplification. From

now on, instead of working with ten Pg sizes, the user only has eight metric sizes to think about. And the labelling also has advantages: the external diameter of rigid and flexible pipes and also the accessories now correspond to the system sizes of the metric size standard DIN EN 60423 – the external diameter is evident even from the type name.

Außen- Ø/mm	Pg-Größen	Außen- Ø/mm	Metrische Größen
12			M 12
13	Pg 7	12,5	
14			
15	Pg 9	15,2	
16			M 16
17			
18	Pg 11	18,6	
19			
20	Pg 13,5	20,4	M 20
21			
22	Pg 16	22,5	
23			
24			
25			M 25
26			
27			
28	Pg 21	28,3	
29			
30			
31			
32			M 32
33			
34			
35			
36			
37	Pg 29	37	
38			
39			
40			M 40
41			
42			
43			
44			
45			
46			
47	Pg 36	47	
48			
49			
50			M 50
51			
52			
53			
54	Pg 42	54	
55			
56			
57			
58			
59	Pg 48	59,3	
60			
61			
62			
63			M 63



OBO Bettermann has implemented the change quickly and consistently: all products are already available in

metric sizes. The clear labelling of metric products with the characteristic M-logo provides an instant overview, while a glance at the clear OBO type table will provide detailed information.

All in white: The OBO WhiteLine.

Pure Joy: ECO Series and Quick-Pipe in pure white

White is increasingly in demand for electrical installations. Particularly in white environments such as cellars or garages, the colour purity should not be disturbed in any way. That is why there is now the WhiteLine from OBO: The whole ECO range and the Quick-Pipe system will in future also be available in pure white. But of

course Quick-Pipe and ECO are not only attractive on the outside: it goes right through.

The refined, streamlined housing of the ECO junction boxes conceals many intelligent details, which enable them to be installed faster, more conveniently and therefore more cost efficiently – and at no higher price than for other products.

Quick-Pipe combines the advantages of cable duct and installation pipe in an innovative, intelligent system. It allows clean and reliable surface installation of many different cables on the wall and ceiling in record time, including in a pipe.

WhiteLine from OBO: you can see what you get.



Everything in one box – the Home Engineering Centre from OBO

Order in the home is essential – that also applies to home engineering. Separate boxes for electrical, sanitary and heating distribution systems scattered all over the place not only complicate the instal-

ler's work, they also make the home look untidy. The solution: planning the use of the new Home Engineering Centre from OBO at an early stage. For the installer this means a distinct improvement in the competitive situation in the planning and realisation of home engineering installation concepts. He can offer his customers a

total concept, installation times are shortened, costs are lower – and with its clear, functional aesthetics the Home Engineering Centre is also pleasing to look at. The new OBO Home Engineering Centre also opens up interesting pro-

spects in the areas of electrical, sanitary, heating and communication systems.

The main advantages individually:

- simple, fast installation without cutting and plastering over in the walls
- clean, clear arrangement of the installations
- simple organisation of building process

- retrofitting possible without structural alterations and at minimum expense
- rising zone from floor to ceiling accessible
- size and colour tailored flexibly to specific features of the property
- centralised meters, also for retrofitting
- and not least an attractive cost-benefit ratio

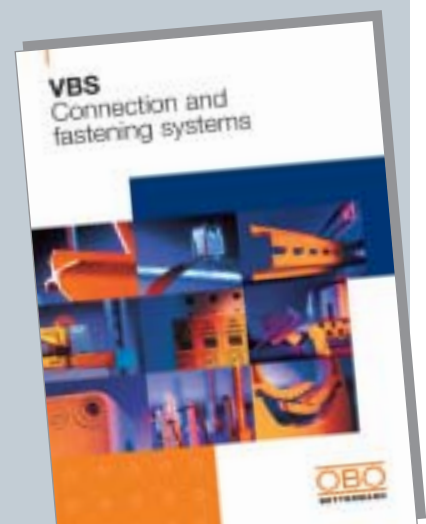


VBS

Connection and fastening systems in English

OBO presents a complete range of connection and fastening systems. With a product range extending from junction boxes, cable glands, flange clamp systems, clips and rail systems to screw and drive systems, earthing systems, equipotential and lightning protection systems

(s. KTS Cable support systems in English, p. 23)



New Combi Controller and Surge Controller:

Effective surge protection „Made by OBO“

Small in size, big in performance: The new OBO Combi Controller type V 25-B+C is a compact lightning and surge arrester of requirement class B and C to DIN VDE 0675 Part 6 (A1/A2). The device was developed specially for use in dwellings (to VDS 2031). If the building has an external lightning protection system (to DIN VDE 0185 Part 100), the Combi Controller ensures effective and safe lightning protection potential equalisation. The V 25-B+C is also capable of protecting buildings connected to an overhead power line. The device is designed to dissipate the high lightning energies that may occur on an overhead line in the event of a direct lightning strike.

Because of its low protection level (< 900 V) and its varistor-based



nically, inductively or capacitively.

design, the Combi Controller is also well suited to filtering and diverting transients (short-term voltage surges) from power supply lines.

A significant advantage of the device is its compact design. This is the result of the fact that only a 17.5 mm housing is needed for each arrester element.

The Surge Controller is usually used in distribution boards, where it can be quickly and easily mounted on top-hat rails (DIN EN 50022). Correct installation is made easier by a pre-wired base and clearly marked terminals.

With TN-S, TT and IT mains systems, the 3+1 connection variant should be used: The new OBO Combi Controller C 25-B+C with non-reversible connections, combined with arrester elements V 25-B+C and V 20-C, ensures a high degree of security against voltage surges.

The C 25-B+C (NPE spark gap arrester) is equipped with a new type of protection against incorrect connection which reliably prevents confusion of the arrester elements and ensures technically correct installation of the protection devices.

The OBO Surge Controller V 20-C is a powerful surge arrester of requirement class C. With its nominal discharge current I_n of 20 kA (8/20), it can protect buildings from damage due to energy-rich voltage surges injected galva-



Surge protection with greater coordination: OBO presents two special LightningControllers



When combined with surge arresters connected in series immediately downstream, the new lightning arresters type MCD 50-B and MCD 125-B/NPE ensure a coordinated response, without the need for additional decoupling elements. The fundamental advantages of the innovative multi-carbon technology of OBO LightningControllers are fully preserved.

The low protection level of ≤ 1.3 kV makes it unnecessary to install decoupling inductances or to provide additional lengths of conductor between lightning arresters (requirement class B) and surge arresters (requirement class C). This results in a space saving on installation of up to 45 percent, a

OBO LSA-PLUS technology:

The “plus” for more surge protection in data, measurement & control and communications networks

OBO's LSA-PLUS surge protection is generally used in multi-wire wiring systems such as those that

occur, for example, in measurement and control technology and in telephone exchanges.

It is important to distinguish between:

- Basic and precision protection LSA-BF 180 (180 V version) for telephone exchanges in analog and ISDN telecommunication installations.
- Basic and precision protection LSA-BF-24 (24 V version) for installations in the data and mea-

For example, with only one surge protection magazine type LSA-B-MAG (basic protection), ten two-wire systems can be protected. Module LSA-BF is used to protect a single two-wire circuit.



great advantage where compact EMC concepts are concerned. In addition, the separate NPE spark gap at the surge arrester (requirement class C) with compact TT and TN-S systems can be omitted.

Preferred fields of application for the new OBO devices are compact surge protection concepts in separate housings and the installation of arresters of requirement classes B and C in a distribution board. Typical applications: Compact mobile radio transmitters

The advantages at a glance:

- Low protection level < 1.3 kV
- No need for a decoupling inductance or a length of conductor between arresters of requirement classes B and C.
- Up to 45 percent space saving with compact EMC concepts.
- Proven multi-carbon technology in the LightningControllers .

surement and control engineering sectors.

Basic and precision protection devices with OBO LSA-PLUS technology are fitted with fail-safe technology, which bridges the arrester in the event of a thermal overload, thus protecting it.

Simply by mounting the LSA-PRO-FIL connection or isolator strip on the PROFIL mounting tray, the surge arresters can be mounted on almost any wall. The LSA-Plus simple wiring tool is all you need to install the wires without cutters, solder, screws or stripping.

Surges don't stand a chance:

New protection devices for mobile systems and directional radio links

A new coaxial surge protection adapter for mobile systems and directional radio links has been added to OBO's TBS range. The new adapter has a 7/16 male connector (DIN) and is designed for the frequency ranges 800 to 900 MHz (type LP 7/16-850 MF-C) or 1700 to 1900 MHz (type LP 7/16-1800 MF-C).

The new surge arresters act as narrow-band filters. Only a narrow range of frequencies is passed by the devices; other frequencies are short-circuited and diverted. With surge arresters of this design, a

direct short circuit is established between the inner and outer conductors. This short circuit takes the form of a coaxial line of precisely defined length, an electrical wavelength of one-quarter of the wavelength ($l/4$) of the frequency to be transmitted.



- No sensitive trigger electronics inside the lightning arresters.
- With compact TT and TN-S systems there is no need for the additional NPE sum spark gap with surge arresters of requirement class C.

The technology of the devices in outline:

MCD 50-B:

The specially doped insulating rings, which determine the precisely defined spacing of the nine spark gaps, guarantee the low protection level (U_p) < 1.3 kV. As with the proven MC 50-B/VDE, the modular

arrester makes it possible to remove the upper part without interrupting the mains voltage, in order to measure the insulation resistance in accordance with TAB2000.

MCD 125-B/NPE:

The type MCD 125-B/NPE version is an NPE spark gap intended to be installed between the neutral conductor (N) and the protective earth conductor (PE). The low protection level (< 1.3 kV) is achieved by a specially coordinated protection circuit.

Make surges harmless right where they enter the building:

reliable system solutions from OBO for the use of lightning arresters upstream of the meter



OBO system solutions of series VG... and SA... are suitable for the installation of lightning arresters of requirement class B to DIN VDE 0675 Part 6 (A1/A2) upstream of the meter. The devices conform to

the corresponding VDEW guidelines for the use of surge protection devices of requirement class B in main power supply systems (TAB guideline of VDEW 01/98). This makes it possible to install the light-

ning arrester directly where the power lines enter the building (boundary between lightning protection zones 0 and 1), in accordance with the lightning protection zone concept of DIN VDE 0185 Part 103.

The following OBO devices may be used for this application:

Series VG...:

LightningController, installed in an IP 65 insulating material housing (sealable).

Version:

VG 3-B/TNC

triple-pole (MC 50-B VDE) for use in TN-C systems

VG 4-B/TN-S+TT

four-pole (3+1 variant) for use in TN-S, TT and IT systems

Series SA...:

LightningController mounted on adapter rail (adapter width 108 mm) for simple and professional installation on 40 mm busbar systems (12 x 5 and 12 x 10).

Version:

SA 3-B/TNC

triple-pole (MC 50-B VDE) for use in TN-C systems

SA 4-B/TN-S+TT

four-pole (3+1 variant) for use in TN-S, TT and IT systems

Lightning protection components

With OBO, the construction of lightning protection installations conforming to DIN/VDE becomes a matter of routine. A "lightning protection kit" consisting of proven components which are easy to install has been assembled for single- and multi-family houses:

For external lightning protection:

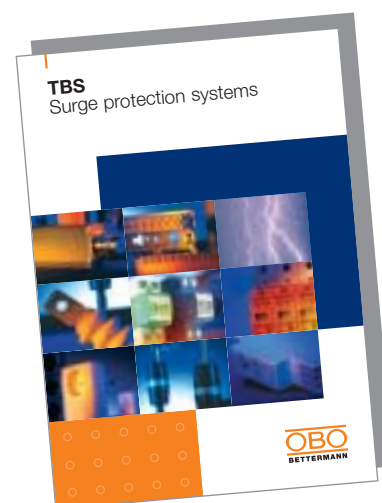
Lightning collectors Conductor systems to carry the lightning current from the collector to the earthing installation Earthing installa-

tions to conduct the lightning current to earth and disperse it

For internal lightning protection:

Equipotential bonding for lightning protection, to reduce potential differences caused by the lightning current.





OBO TBS surge protection catalogue

Effective protection for sensitive electronics



- ▶ TBS External lightning protection - basic seminar
- ▶ TBS Surge protection for energy technology
- ▶ TBS Surge protection in communications and data technology



At our training and conference centre at Menden and at our regional branch offices, we constantly offer a choice of basic and advanced seminars on surge protection. Please get in touch so that we can reserve a place for you at OBO!



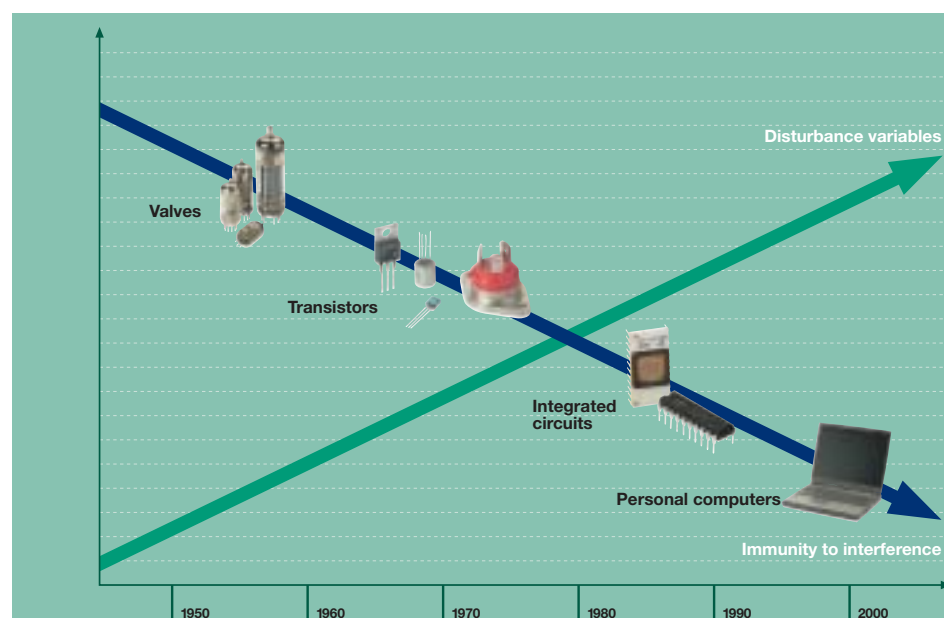
Surge protection – a topic that has become increasingly important in recent years. Costly technical equipment which is sensitive to voltage peaks on the supply is no longer found only in offices and factories, but in our homes as well.

Nowadays, highly-sensitive data processing, telecommunications and computer networks form the backbone of world-wide communications structures without which no company or public body can survive. Machines and production lines are monitored and controlled by electronic programm sensors. And

even many creative services are no longer conceivable without the aid of computers.

The range of OBO surge protection systems extends from basic mains protection to precision protection, from data line and measurement and control system protection to isolating spark gaps, which are installed either centrally or decentralised.

You can find full information in the new TBS catalogue for surge protection systems.



surface of a Double Dip coating



ball impact test: individually galvanised

Double Dip:

Innovative coating process for cable support systems offers many advantages

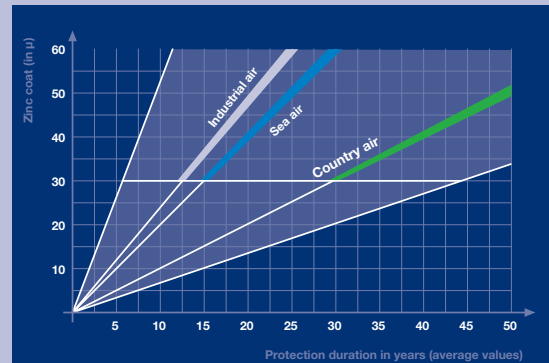
Steel is a material which is more indispensable than ever in modern cable supports. Its outstanding use and processing properties and the exceptional value for money make steel an irreplaceable construction material in almost every area.

Modern steel materials are constantly being further developed, with particular attention to corrosion protection. Hot dip galvanising has proved an excellent method since 1860. Since 1959 strip galvanised sheet has been produced continuously in Germany. Zinc-alu-

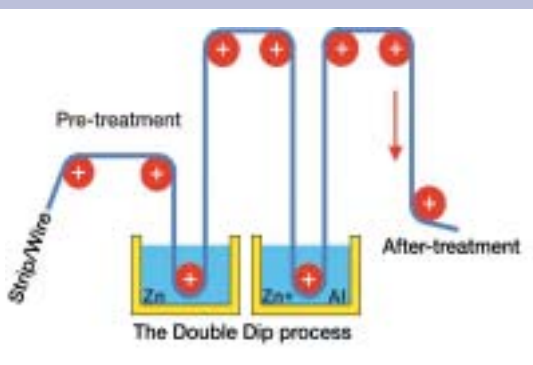
minium alloys have been used since the early 80s, while in 1998 OBO supplied the first components for cable support systems from Galfan.

A further development of this coating process was achieved two years ago by a subsidiary in the Thyssen/Krupp Group. By contrast with the previous coating systems, in this "Double Dip" process the strip to be galvanised passes through two zinc baths in succession with different contents. The first bath contains pure zinc, the second a zinc-aluminium alloy.

With this innovative process Zn-Al coatings of 70µ per side or 1000 g/m² on both sides are achieved, with at the same time excellent plasticity and high adhesion of the coating. The coating produced in this way is made up from a eutectic zinc-aluminium structure and a zinc-aluminium-iron alloy coat.



Tests on sample components of cable support systems in the Dortmund Surface Coating Centre and internally in the BET Institute confirm the outstanding corrosion protection properties as compared with conventional zinc coatings. After 552 hours in a salt spray mist the Sendzimir and also the hot dip galvanised samples showed clear signs of corrosion, while no red rust formation could be detected even after over 1600 hours in the Double Dip samples in spite of bare cut edges. Outdoor weather tests with Double Dip protected components



3 OBO

Zn-rich mixed crystal
ZnAlFe alloy coating
Eutectic system in ZnAl
Steel

4 OBO

sendzimir galvanised

5 OBO

individually hot dip

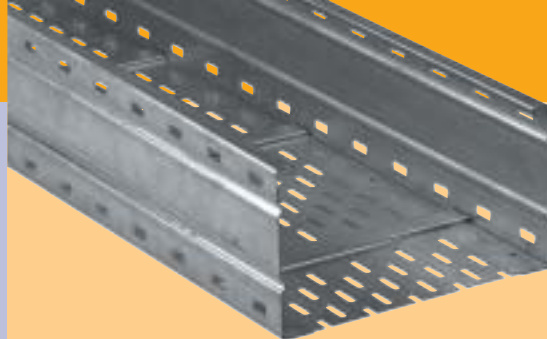
confirmed these outstanding results.

The wear rates for Double Dip wires have already been extrapolated to 15 years. They were lower by a ratio of

1 : 5 than for thick galvanised (330 g/m²) surfaces.

Zinc-aluminium alloys have been in use for over 20 years. The Double Dip process for sheet metal is still so new that it has not yet been described in standards. The standard EN 10244-2 (2:2001) contains requirements for wire coatings in ZnAl. All standards for hot dip galvanised steel strip are being revised at international level. A new combined standard will be produced from the three existing ones. It will also contain higher zinc-aluminium coat thicknesses, as are already offered by the Double Dip process. The DIN ISO 12944 series contains in six parts topics on the coating systems for steel structures and can also be applied to cable support systems. It records different types of surface, environmental conditions, service life, structural features and laboratory tests.

In respect of the features described in this series of standards, Double Dip can be classified in the highest corrosion class. In the still valid product standard DIN VDE 0639 a corrosion protection classification is described, while a revised classification will follow in the newly published IEC / EN 61537 (9:2001).



New in the OBO range: Wide span cable tray with 160 mm high sides

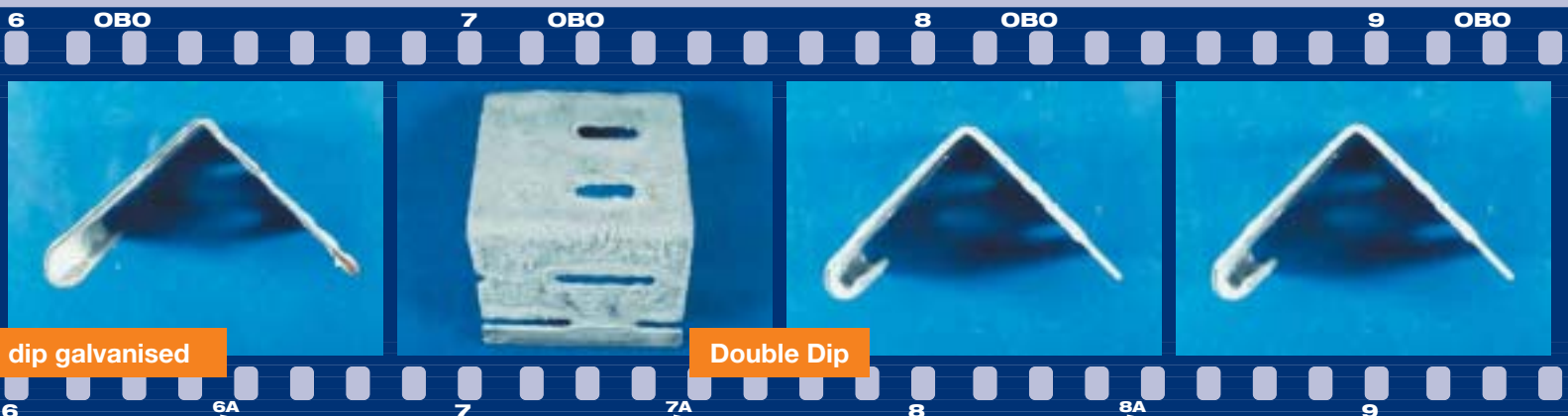
Completing the upper end of the OBO KTS range, the new wide span cable tray stands out with its extremely high load-bearing capacity and low deflection. The wide span cable tray can withstand a load of 125 kilograms per metre, with a support spacing of 7,000 mm. It is equipped with a 160 mm high, continuously perforated side rail and a base plate with transverse beads.

The wide span cable tray is particularly suitable for use in industrial plants, where wide support spacings are needed. The new WKS 160 is available in widths from 200 to 600 mm and of course comes with the accessories required for fast, problem-free fitting.

Wherever extreme corrosion protection is needed, cable support systems with Double Dip coatings are an economical and ecologically convincing solution. The main advantages:

- Ease of installation – no material distortion.
- No risk of injury to the fitters and no more cable damage from burrs and zinc projections.
- No after-treatment needed on site.
- Greater corrosion protection – longer service life for the same price.
- Very good adhesion of the zinc coat – no flaking under impact stress.
- Lead-free zinc coating

OBO Bettermann will gradually provide part of its cable support system product group and the associated fixing materials with Double Dip galvanising.





Ingenious solution: New universal cover clamp

With the universal cover clamp OBO Bettermann has brought a new clamp onto the market which can be used for many purposes. It attaches covers to the lower duct sections of cable trays, mesh cable trays or AZ small ducts. The clamp is made from resilient stainless steel material and is therefore resistant to



corrosion. Its big advantage is the flexible, simple and rapid fixing without fitting tools. Another advantage is that this new product can also be used to fit covers securely to remaining tray and duct sections.



OBO systems

for the communication networks of today and tomorrow

UMTS – four letters for a new dimension, new quality and new speed of mobile communications. A prerequisite for the use of UMTS is the construction of a widespread network of high-performance UMTS transmission units. And here OBO Bettermann is ahead of the field as a system supplier with a global operation. With modern lightning and surge protection devices, earthing and equipotential bonding systems. With universal cable support systems and installation ducts. With practical connection, fixing and rail systems. With a complete range and professional solutions for every field of electrical installation.

OBO - for a perfect start to the future of mobile communications.

For detailed information, please consult our brochure.



OBO mesh cable tray family

GR Magic, GR Series, C Series.

GR-Magic

GR Magic is the innovative top product in the OBO mesh cable tray family. Simple and fast fitting without screws for the longitudinal connection of the trays. No special tools are needed. High flexibility, high load-bearing capacity, good ventilation and the best quality materials and processing have led more and more professionals to choose the quick, easy to fit GR Magic. With GR Magic every cable line can be laid quickly and easily – a real advantage for planner, architect and installer.

GR/GRL

The OBO classic in mesh cable tray installation.

The many advantages mentioned are based on this system.

Laying is simple, connection with the GRS quick connector is simply ingenious. A few manipulations and installation is perfect, of course with the OBO system accessories.

C-GR

Designed for tough tasks. Greater load-bearing capacity and special meshes make it ideal for industry and projects. Its construction allows devices and switchboxes (CEAG) to be integrated in the

laying. Special cable mesh tray technology for demanding applications.

Mesh cable tray installation accessories

The system components are the “fuel” for the cable tray in installation engineering. They are highly innovative, load-bearing and easy to fit. So laying is always successful.

The professional's choice

OBO mesh cable trays are becoming increasingly popular in the installation of cable lines - particularly GR Magic. As well as the pro-

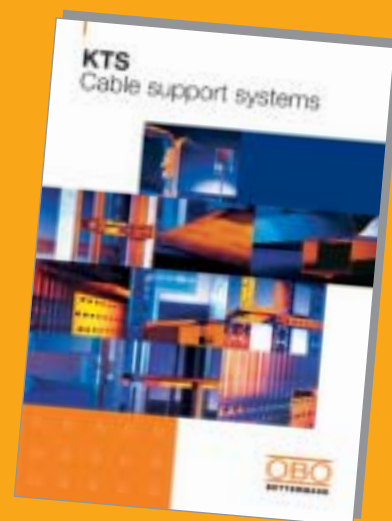
ven features of the mesh cable tray, this innovation has an advantage that no similar product can offer. It can be fitted in record time in the longitudinal connection without screws and without special tools thanks to the patented connection system – so it is clearly quicker and more efficient in practical installation. Another example of how OBO is bringing progress to electrical installation with new innovative ideas.

For complete information please see the brochure on OBO cable mesh tray systems.

KTS Cable support systems in English

The comprehensive OBO range of cable support systems is now available in English too. Cable ladders, mesh cable trays, vertical ladders and luminaire support ducts as well as a complete and practical selection of accessories are presented in a clear form.

With this catalogue OBO is expanding its range of catalogues in English (s. VBS Connection and fastening systems, p. 14)



Tangit fire protection for electrical cables

Fire protection: fast, easy, safe

Cable insulation in fire resistance class S 90 according to General Building Inspection Registration-No. Z-19.15-1367

Areas of application:

- All kinds of electrical lines
- Power 230/400 Volt
- Telephone lines
- Aerial lines
- Glass fibre lines
- Data lines
- Optical fibre cables



Tangit fire protection foam has a high foaming volume, very good initial adhesion and high ageing resistance.

After hardening the fire protection foam is physiologically harmless.



Fire protection foam FP 500
Fire protection paint FP 802

BSK Fire protection duct

We'll go through fire - safely - for you



Keeping vital power supplies working in the event of a fire.

With the new BSK fire protection duct, OBO BSS fire protection systems can now offer you complete security for all electrical installations which are required to meet fire protection standards.

The easily installed OBO BSK fire protection ducts are made from glass fibre reinforced lightweight concrete, and are harmless to health and the environment both during installation and in a fire. If damage should occur, in spite of the hardened surface, this can be easily repaired with a plaster trowel.

To safeguard and isolate cable systems for the escape and rescue route, OBO offers the OBO BSK fire protection duct, which meets the following fire protection classifications:

E-duct

The E duct means that power circuits with a safety function can be kept working. The E-duct has been

tested to DIN 4102 part 12 for direct wall and ceiling installation.

I-duct

The I-duct is used for protection of escape and rescue routes in a possible cable fire. It keeps escape and rescue routes free of fire, smoke and heat. The I-duct has been tested to DIN 4102 part 11 for direct wall and ceiling installation.

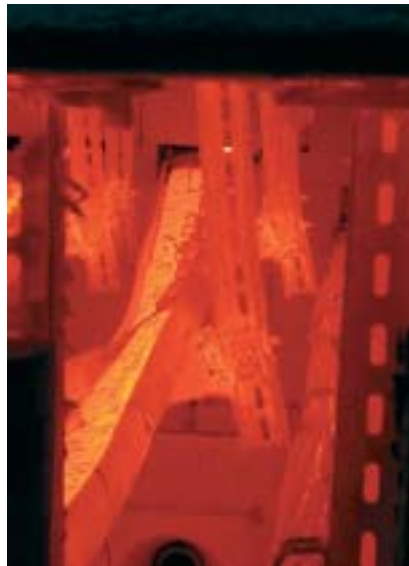


Subject Function Maintenance:

Tested and approved

Grouped support OBO Grip M can now be used for function maintenance without long trough

The grouped support OBO Grip M could always be used for function maintenance in combination with a long trough. But now it also works without one. Corresponding tests have certified that grouped support OBO Grip M, type 2031 M/15 achieves function maintenance class E30 even without a long trough. It can bear a cable weight of up to 1.1 kg/m, corresponding to up to 16 telecommu-



nication cables. was bis zu 16 Fernmeldekabeln entspricht.

Suspension without threaded rod awarded classification E30

One of the biggest problems with function maintenance in cable lines has always been securing the bracket tips with threaded rods. During the next cable laying at the latest either all threaded rods must be removed again or the additional cable must be laboriously threaded in. Now for the first time OBO Bettermann has had a suspension with a bracket without threaded rod protection tested by a materials testing institute. With outstanding results: at a spacing of 1.5 m and a cable occupation of 20 kg/m the system on an OBO cable ladder achieved function maintenance class E30.

Function maintenance also possible with mesh tray

OBO can now also supply a mesh cable tray for function maintenance. In corresponding tests the OBO mesh tray achieved function maintenance class E90 with support spacing of 1.5 m and cable occupation of up to 20 kg/m. With its low own weight and simple assembly this system represents an interesting alternative to the function maintenance systems used previously.



Fire protection systems for electrical cables and lines

Preventive fire protection is an important element of safety in buildings. In this proper construction of the electrical installation plays a decisive role. With its expanded range OBO offers a selection of systems for comprehensive fire protection.

Cable insulation

For fire-resistant sealing of wall and ceiling routings. These systems prevent transmission of the fire to other sections via the cable and line network.

Fire protection ducts

For securing and isolation of cable systems in escape and rescue routes.



Function maintenance

The use of special lines and laying systems guarantees that all power circuits with a safety function continue to operate in the event of fire.

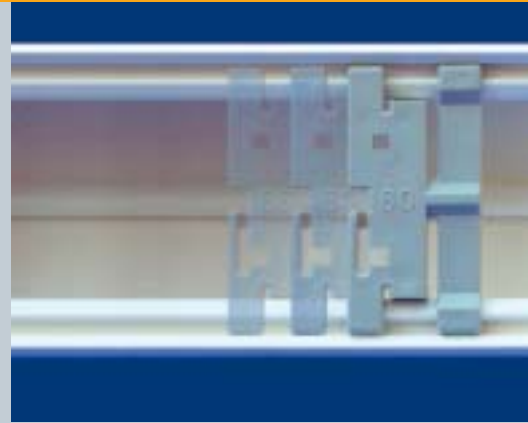
WDK duct with new product advantages:

continuously adjustable cover clip

Product care for OBO's WDK ducts: in combination with the new cover clip, the line routing ducts allow continuous adjustment of the clips over the whole length of the duct. To facilitate cable fitting, the clips are locked in on one side and project forwards. This gives a 30° opening, so that the cables can be laid in quickly and without problems.

The cover clip is placed on the duct floor as it is supplied.

Above a duct width of 100 mm the clip can also be used as a connector in the fitting of line routing ducts.



New device socket for Switzerland added to the range

For Switzerland OBO Bettermann has added a new, versatile device socket to its range. The socket is lockable and is intended for use in skirting ducts made from plastic

(GEK), steel (GES) and aluminium (GEA). The main advantage of the device socket is the variable possibility for fitting into the different duct

systems. Direct lining up of the sockets is not possible.



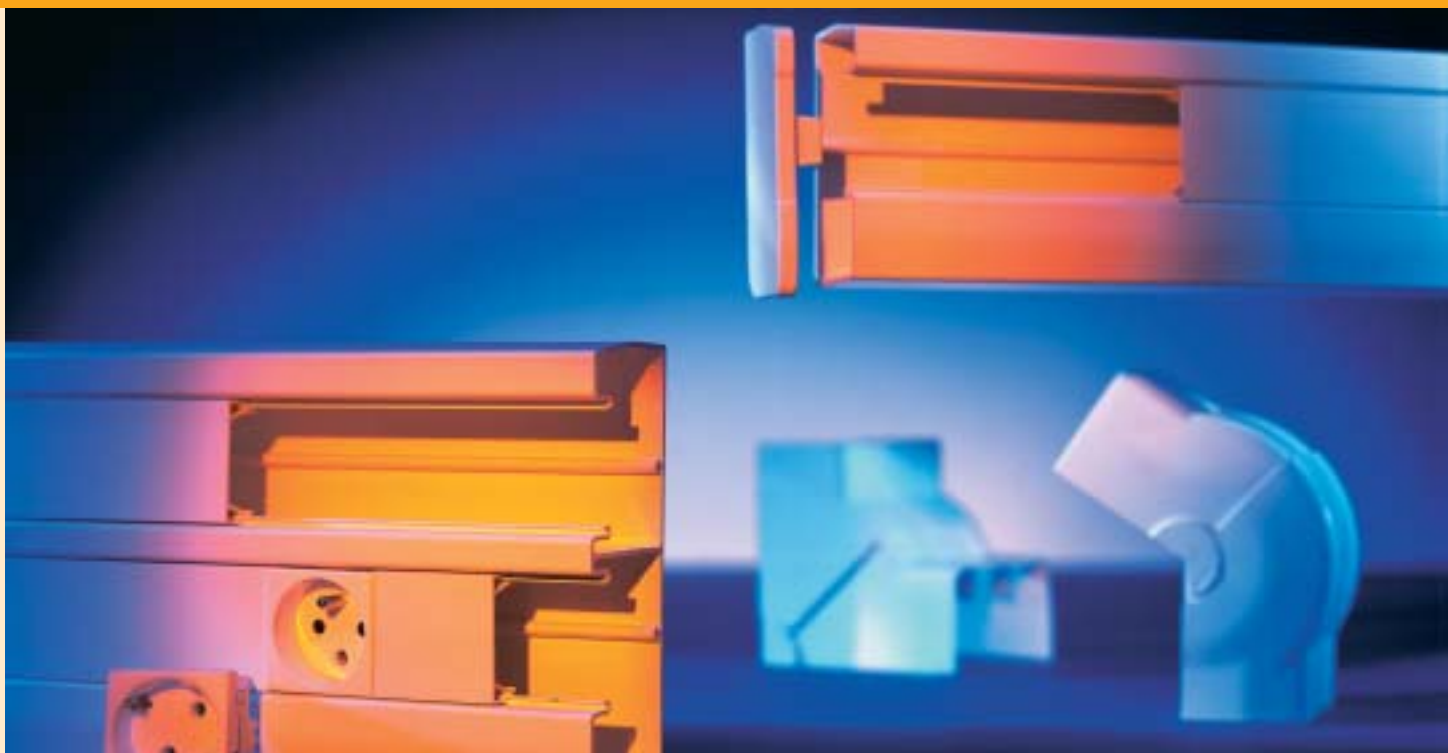
LKM duct: special contour for potential equalisation

OBO designers have succeeded in devising a particularly intelligent solution in the development of the new LKM duct. The newly developed locking contour of the duct ensures that potential equalisation and a protective conductor function are created between the upper and lower sections – entirely without accessories.

The newly developed cover clamp also simplifies the overhead fitting

of the cables in the line routing ducts.





The new skirting ducts Rapid 45

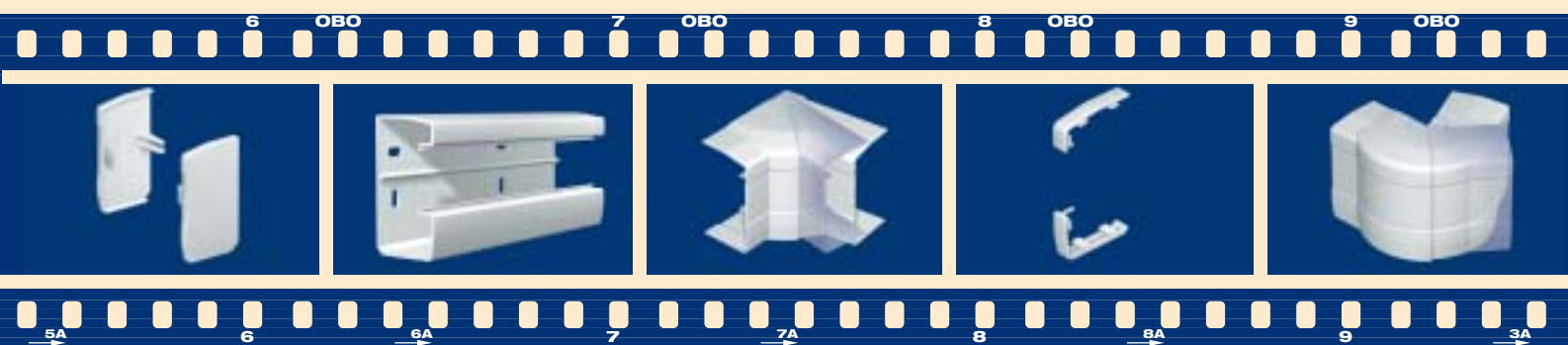
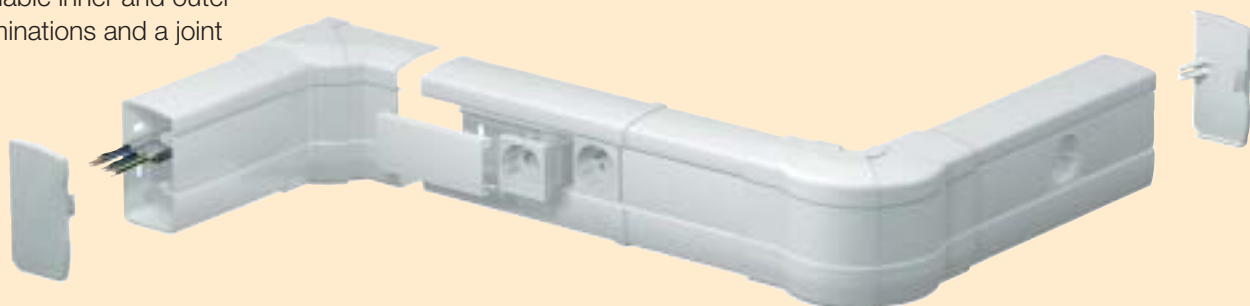
The new OBO Rapid 45 skirting ducts, type GEK/45... offer the fitter many different uses. The ducts can be used both as skirting board ducts and as single and dual skirting ducts.

The system has been sensibly completed by various mouldings, including variable inner and outer corners, terminations and a joint cover.

Fitting of the built-in devices is completely simple and is carried out by direct plugging into the ducts. Separate device sockets are not needed, which means significant savings in the time required for fitting by the installer.



The Rapid GEK/45 ducts are available in sizes 53 x 100 mm (single) and 53 x 160 mm (double).



OBO Media Columns – the most attractive channels for energy

Supporting columns for modern
and functional interior design.

OBO Media Columns meet all the
technical and architectural require-
ments for routing of modern com-
munication lines and also actively
influence interior design. Media
columns establish design accents
in any open-plan office and create
order and thus security.

This ingenious, modular system
allows free positioning of supply
points close to the workstation.
Later change of location is possible
at any time and thus offers the gre-
atest possible freedom to users
and architects.

The colours, shapes and dimen-
sions of this system offer the archi-
tect a virtually infinite palette of
possibilities.





Range of halogen-free OBO products expanded: now includes cable duct systems

The use of halogen-free installation materials guarantees greater safety in the event of a fire. OBO Bettermann has now added halogen-free

cable duct systems to its range of products made from this special plastic material.

In a fire halogen-free installation material does not give off corrosive gases. It also causes significantly less smoke formation in indoor spaces and stairways in the event of a fire. Another advantage is that the material is self-extinguishing and helps to protect sensitive electronic equipment and valuable furnishings against fire damage.

The new OBO LFS cable routing systems

The comprehensive OBO range for all cable routing systems, with line routing ducts, skirting ducts and wiring ducts, skirting duct systems in steel plate and plastic. The range is completed by a practical selection of fixing elements.

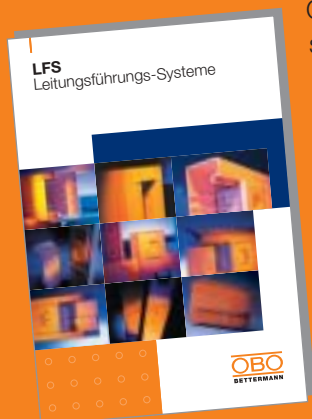
OBO has also developed a new generation of skirting ducts -

Quickline – in steel plate and aluminium, which stand out for their fast and user-friendly installation.

New to the range of cable routing systems are the individual skirting ducts, IBIS-Integral, for tailor-made solutions for all building plans.

The selection is completed by the new media columns. These meet all the technical and architectural requirements for modern communication cable routing systems. They create design accents and can be adapted individually to any space situation.

So first and foremost the use of the halogen-free material means greater safety for people, but it also facilitates fire-fighting inside buildings and reduces fire damage. With the new halogen-free cable duct systems OBO Bettermann is making another important contribution in this area.



Versatile and flexible in use: the new underfloor connection socket

With the new underfloor connection socket OBO can now supply a product to solve innumerable problems in use. With just a single socket it is now possible to bridge height levelling from 56 to 130 mm. For fitting heights between 130 and 170 mm a special height compensation set is available as an accessory.

All duct widths (140, 190, 240 and 340 mm) can be fed into the new connection socket. The various duct widths are guided and held simply by raising the brackets. All the device installation units in the

OBO range can be fitted via the various holder plates.

A particular advantage for the user: the decision on which device installation unit is to be fitted only needs to be made on completion on the building site. The lower part is always the same and only the holder plate changes.

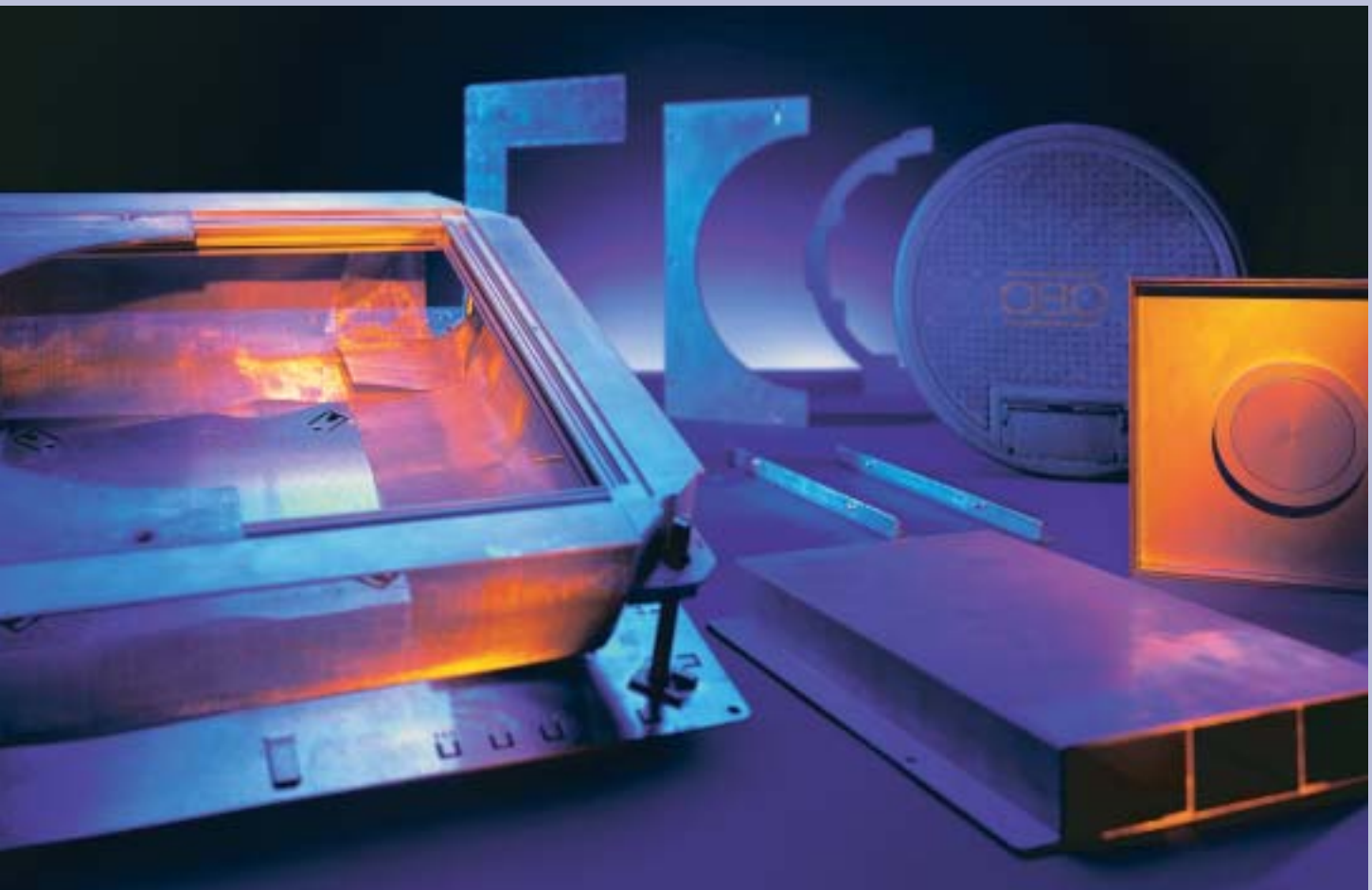
The fabric on the side, which can be cut with normal scissors, makes it possible to adapt the cut-out to any duct size. The projecting side parts are then simply tacked together.

Farewell to transmission of impact sound!

After removal of the decoupling elements the socket is attached to the floor surface and then has no further contact with the ground

The advantage of this is:

If the floor surface subsides after some years, the socket sinks with it.



Underfloor cassettes with new support frames

The stainless steel cassettes for the OBO underfloor systems have been improved. The new support frames on the cassette frames allow the frames to be fitted in cavity and false floor systems and in floors subject to dry and wet care.

The new cassette frames have a laying depth of 19 or 39 mm and are available as

- Cassette frame with cassette
- Cassette frame with cable outlet
- Cassette frame with tube



Device installation unit with interior carpet protection frame



The logical follow-on from the exterior frame – the interior carpet protection frame. This prevents fraying of carpets.

Typical OBO – as used by professionals.

IMPRESSUM

<h3>Printer's imprint</h3> <p>The OBO Blick team would like to thank everyone who has contributed to this edition. We have received ideas, manuscripts and/or photos from: Markus Arens, Rolf Barczewski, Hans-Dieter Bausen, Dieter Beckmann, Andreas Bettermann, Ulrich L. Bettermann, Thomas Butzek, Achim Dietz, Antonius Geise, Norbert Gornik, Olaf Grisail, Karin Herrmann, Ulf Jantzen, Ernst Günther Jordan, Stefan Kemper, Aad Kamer, Wilfried Kentenich, Andreas König, Anton Korn, Jürgen Korte, Andree Kröger, Peter Sieger.</p> <p>Please show your forbearance should we have forgotten to mention any one here.</p>	<h3>Editorial team</h3> <p>Andreas Bettermann, Norbert Gornik, Herbert Köster, Karin Herrmann</p> <h3>Editorial department</h3> <p>Anregungen, Hinweise, Textbeiträge und Fotos senden Sie bitte an das OBO-Blick-Redaktionsteam, Projektleiter Norbert Gornik / Marketing-Kommunikation. OBO Bettermann GmbH & Co., Postfach 1120, D-58694 Menden, Tel.: 0 23 73 / 89-0, Fax: 0 23 73 / 89-2 38, E-Mail: blick@obo.de, Internet: www.obo.de</p>
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Compact, comprehensive, up-to-date: The OBO range on CD-ROM and on the Internet

Perfect solutions for every field of electrical installation. This claim is fulfilled by the comprehensive OBO product range.

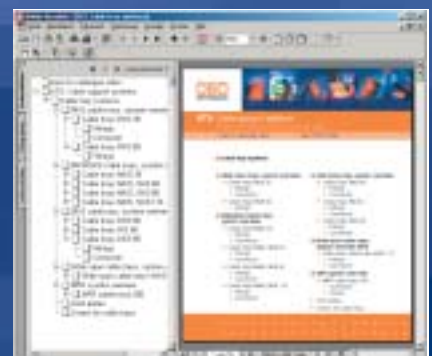
OBO offers all users the possibility of obtaining information about the various product ranges not only in print but also in digital form. Two alternatives are available. OBO digi-

tal media – user-friendly and practical like everything from OBO. True to its motto "By professionals for professionals"



► The compact digital product summary on CD-ROM.

► All product catalogues as PDF files for downloading on the internet on www.obo.de



**Conducting electricity. Routing data.
Controlling energy.**