



HERMES BS 118

Sanding belts for sanding lacquer and plastic

Abrasive discs for stone and marble

Online-version
with updated product data

HERMES BS 118

Product description

The trend in development towards replacing glue-bonded abrasives on a paper backing by resin-bonded products to an increasing extent is illustrated by the new HERMES coated abrasive BS 118. Resin bonds always provide a higher bond strength between abrasive grain and backing by comparison with glue. This is associated with important technological advantages such as greater toughness in the grinding and sanding process, greater impact and edge strength and greater wear resistance. Moreover, the abrasive papers are not as sensitive to moisture.

Consequently, the range of characteristics of the resin bond permits the scope of application of such coated abrasives to be extended to areas which were previously the sole domain of other abrasives. Thus, abrasive types can be supplemented or substituted, and the variety of abrasive types can be restricted. Various bond types are available for BS 118, dependent upon the grit size range:

In the coarse grit range with the aim of very strong embedding of the abrasive grain in the make coat and size coat, and in the fine grit range, aimed at fully utilising the coating edge sharpness of the abrasive grain.

BS 118 has an antistatic finish, i.e. electrostatic charging and associated clogging of the cutting area during sanding and grinding are largely avoided. Far less dust accumulates in the machine and there are far less dust deposits on the sanded and ground workplaces if this coated abrasive is used.

Silicon carbide is used as the abrasive grain for BS 118. This type of grain is extremely hard (approximately HV 100 = 26,000 N/mm²) and has great friability. This means that the abrasive grain is self-sharpened during machining, dependent upon the actual material/cutting material combination. New sharp cutting edges are formed continually at a microgeometric level. This behaviour produces a uniform finish and relatively low thermal loading of workpiece and abrasives.

However, silicon carbide has an adequate grit toughness for effectively withstanding the sanding and grinding forces occurring during the process, particularly with coarse grits.

One further development trend is towards using stable and tear-resistant paper qualities for coated abrasives. BS 118 has thus been provided with a heavy-duty F-weight paper with a base weight of approx. 300 g/m² as the backing in the coarse and medium grit size range for this reason. This opens up possible applications as wide grinding belts and abrasive discs.

The various possible applications of BS 118 necessitate more

stringent requirements being made of the abrasive- side paper surface quality for the grit size range P 240 to P 1200. In order to achieve optimum flatness, particularly smooth and high-quality F-weight papers were used with a lower base weight. This produces a very uniform and reproducible grit coating which greatly contributes towards improving the quality of the coated abrasives and, thus, optimum grinding behaviour.

Form of delivery

BS 118 is available in rolls, narrow belts, wide belts, perforated abrasive discs, self-adhesive or velours backed abrasive discs.

Scope of application

The newly developed HERMES coated abrasive BS 118 is designed mainly for sanding lacquer, plastic and stone. In such applications, the physical characteristics of the silicon carbide are effectively utilised. The main point of emphasis with BS 118 lies in the sanding of lacquer in the furniture industry. The coated abrasives for such applications are used in the form of wide belts or long belts for intermediate lacquer sanding of large-area, flat workpieces.

The modern lacquers and lacquer systems available today permit higher throughput speeds overall with a continuous production sequence, thanks to their characteristics so that higher feedrates of approximately $v_f = 20$ m/min can be set even when sanding.

On the other hand, the temperature-sensitive lacquers require adaptation of the cutting speed towards values which are in some cases extremely low in order to avoid premature clogging of the sanding belts owing to possible thermal softening of the varnishes.

The cutting speeds are as follows, dependent upon the type of varnish

- for polyacrylic, polyester, nitrocellulose and polyurethane lacquers,

$$v_c = 2 \text{ to } 8 \text{ m/s}$$

- for pigmented polyester, acrylic and epoxy resin lacquers.

$$v_c = 6 \text{ to } 16 \text{ m/s}$$

Owing to the use of relatively rigid F-weight paper qualities, a dynamically stable running and grinding behaviour can be achieved with BS 118, even at such low cutting speeds. This is a basic pre-condition for high-quality surface sanding.

The grit size range for intermediate lacquer sanding generally extends from P 220 to P 400. It even extends to P 1200 if there are very stringent requirements made of the surface quality in the ultra-fine grit size range.

One further field of application is sanding plastics. Examples of this are decorative panels and worktops, window ledges, floor coverings and other prefabricated compound units. In the same way as the lacquers, this diverse group of materials requires a sharp, hard and stable cutting edge in particular in order to

achieve the minimum cutting thickness in the elastic area of the engagement zone and, thus, chip flow in the shearing plane. Owing to lower grinding forces, this achieves lower thermal stressing of the workpieces, so that, to a large extent, the coated abrasives do not become clogged with adhering chips.

Owing to the wide diversity of plastics, the grinding parameters must be selected dependent upon the individual machining task, and so it is not possible to state generally valid guideline values at this point.

Self-adhesive abrasive discs are mainly used in the stonetrade and in addition velours backed discs are possible too for the related edge machining tasks. The coated abrasives which are mounted on angle or eccentric grinding machines are used in damp conditions in order to avoid excessive dust development when grinding: This application prerequisites a high resistance of the backing to paper layer delamination. The F-weight paper used on BS 118 meets this requirement owing to the sturdy layer

construction. Moreover, resin bonding increases resistance to process-related moisture and, at the same time, guarantees a high bond strength of the abrasive grain in view of the high stressing of the abrasive during edge grinding.

Both features of the BS 118 result in a longer service life and greater performance when grinding.

BS 118 abrasive discs are used primarily in grit sizes P 40, P 60, P 80, P 120, P 220, P 320 and P 400. Example applications include grinding gravestones and window ledges made of various materials, and marble staircases.

HERMES alternative coated abrasives

BW 114

BS 119

BS 119 Longlife

Coated abrasives data

	BS 118	BS 118 SK	BS 118 VEL
Type	BS 118	BS 118 SK	BS 118 VEL
Code	11800	11805	11807
Grain	Silicon Carbide	Silicon Carbide	Silicon Carbide
Grit range	P 40 - P 320, P 400 - P 1200	P 40, P 60 - P 120, P 180 - P 240, P 320, P 400, P 600 - P 1200	P 40, P 60 - P 120, P 180, P 220 P 320, P 400, P 600 - P 1200
Bonding	Resin, antistatic	Resin, antistatic	Resin, antistatic
Backing	F-weight paper	F-weight paper, self-adhesive	F-weight paper, velours-backed
Max. production width	1620 mm	1620 mm	1620 mm
Joint	EB 001 (UBN) EB 002 (UB2)	- -	- -
Form of delivery	FE 011 - Rolls FE 040 - Belts FE 041 - Wide belts FE 050 - Discs	- - - FE 050 - Discs	- - - FE 050 - Discs

