



# HERMES BW 114

Abrasive tools for sanding

wood products and paints

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**Online-version**  
with updated product data

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# HERMES BW 114

## Product description

The abrasive sanding of wood materials involves special requirements for the sanding tools due to the specific properties of the various types of wood. Thus abrasive particle wear is not the main focus of attention in the development of these tools, but rather the question of chip clearance, the spacing between cutting edges and the mechanical/electrostatic interaction between tool and workpiece during the sanding process. These factors have a long term effect on sanding characteristics and tool life since loading of the chip spaces, adhesion of sanding particles to the grain or the buildup of electrostatic charge may cause reduced belt life.

The sanding of paints and tiller compounds generally involves different problems, but the problem of shortened tool life is again present. As with wood, the main problems are loading and adhesion of material particles to the grain after initial wear.

Lack of chip space reduces the sanding capacity of the tool to such an extent that optimal chip removal is not achieved. This means that tool effectiveness is reduced even though the belt condition would permit continued use. Cost effective production would no longer be possible.

This is the context in which the new HERMES BW 114 tool series was developed. Its design is characterized by features that optimize tool topography and reduce electrostatic charging in sanding of both wood and painted materials.

To cope with different material characteristics of wood products and painted materials it was first necessary to analyze the behavior of the grain layer and the paper backing in the sanding process. Higher mechanical stresses occur with coarse and medium grains in woodworking and this requires an open coated surface with wide spacing between grains. These unique requirements have led to the development of a very open grain structure. This open grain structure can be found in the P 40 to P 220 grit range of our BW 114 products.

The grain type used in the entire grit range is pink aluminum oxide. Like white aluminum oxide, pink aluminum oxide is characterized by sharp grain points and a high hardness level, but it is also tougher than the white grain. This toughness reduces the tendency of the grain to splinter.

In keeping with modern developments, BW 114 is a full resin bonded tool on a paper backing. This provides benefits with regard to higher load capacity and increased impact and edge strength. Resin bonded paper backings are also more resistant to moisture. Backing strength was increased for grit sizes P60 and P80 in order to handle the higher cutting forces in rough sanding.

The BW 114 products are also designed to be anti-static in order to combat electrostatic charges that are created during sanding operations.

The charge potential is dissipated by electrically conductive materials contained in the resin bond that reduce the adhesion of chips to the tool surface. This effectively reduces clogging of the abrasive layer and considerably reduces dust accumulation in the machine as well as dust deposits on the workpiece. The ant-static feature also improves the working efficiency of the machine's dust collection system by neutralizing charge.

## Product form

HERMES BW 114 is available as roll product, narrow sanding belt or wide sanding belt. The endless sanding belts have a standard overlap joint.

## Applications

The newly developed HERMES BW 114 is primarily for abrasive sanding of soft wood and painted surfaces.

Both of these material types are particularly susceptible to loading. This problem is reduced or prevented by the use of BW 114.

In the woodworking industry BW 114 is mainly used in the grit range P 60 to P 180. It is generally favorable for sanding and finishing pine, spruce, teak and rosewood.

The open grain structure of BW 114 facilitates the sanding process which has inherent application problems such as sticky resins and glue present in the wood products.

The sanding of laminated wood, solid wood, veneers and panels is most commonly done with long belt or wide-belt sanding machines in order to achieve flat surfaces. Belt speeds are generally between 2300 s.f.p.m. and 5500 s.f.p.m.. Feed rates are usually 50 f.p.m. to 65 f.p.m..

Additional applications for BW 114 include pressed laminated materials made of paper impregnated with melamine resin, and coating foils (e.g. plastic edge bands). Usually wide belt sanding machines are used, working in the grit range P 60 to P 100. Again the sanding process is hindered by the presence of sticky, gummy resins and paraffins but the open coated surface of BW 114 copes effectively by providing sufficient chip clearance.

Particle panels belt speeds range from 3000 to 5100 s.f.p.m. while panels processed for foil overlays are sanded at 2400 to 3200 s.f.p.m.. Feed rates are in the range of 65 f.p.m. to 80 f.p.m. for particle board and 15 f.p.m. for coating foils.

For the furniture industry BW 114 with pink aluminum oxide is an alternative to silicon carbide tools for finishing painted surfaces. These sanding tools are available as long belts or wide

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belts in the grit range P 180 to P 800 depending on the desired surface finish.

BW 114 is particularly suitable for finishing colored paints and lacquers with a nitro cellulose, polyurethane, polyester or acrylic resin base.

The best sanding results are obtained at comparatively low cutting speeds of 400 to 1600 s.f.p.m. for polyurethane clear lacquer and 1200 to 31 00 s.f.p.m. for pigmented paints. Feed rates of 50 to 65 f.p.m. are possible today in modern plants for most applications.

#### **HERMES alternative coated abrasives**

|        |                 |
|--------|-----------------|
| BW/RB  | BS 119          |
| BW 115 | BS 119-Longlife |
| CB 115 | BS 121          |
| BS 118 |                 |

#### **Coated abrasive data**

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|-----------------------|---|
| Type                  | BW 114  |
| Code                  | 11400   |
| Grain                 | Pink aluminium oxide  |
| Grit range            | P 40 to P 800   |
| Bonding               | Synthetic resin   |
| Backing               | E-weight paper (P 240 to P 800)<br>F-weight paper (P 40 to P 220) |
| Max. production width | 1620 mm   |
| Joints                | EB 001 (UBN)<br>EB 002 (UB2)<br>EB 008 (UB8)                      |
| Form of delivery      | FE 018 Rolls<br>FE 040 Belts<br>FE 041 Wide Belts<br>FE 050 Discs |

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