

PROCESSING INSTRUCTIONS

MANUFACTURER: RESOPAL®

MATERIAL: **RESOPAL®** Traceless (TL - TS)

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PRODUCT DESCRIPTION

RESOPAL® Traceless is a high-pressure laminated board with an anti-fingerprint, satin-finish, non-reflecting and soft-touch surface, designed for interior decoration. Based on DIN EN 438 Part 3 and 4 **RESOPAL® Traceless** complies with the requirements stipulated therein, however due to the surface material used it is not a high-pressure laminated board according to DIN EN 438.

PROCESSING INSTRUCTIONS

The following machining information is based on a wide range of test series with the best machining results in each case conducted by LEUCO Ledermann GmbH & Co. KG.

DEFINITION OF TERMS

DP = DIA; **HW** = tungsten carbide; **HR** = hollow back; **L-S** = slow, fast; **L-S-L** = slow, fast, slow; **vc** = cutting speed; **fz** = tooth feed; **vf** = feed speed



RESOPAL® Traceless panels

Decors: Decoratieve layers and Unis
(Picture source: RESOPAL®)

1. GENERAL INFORMATION

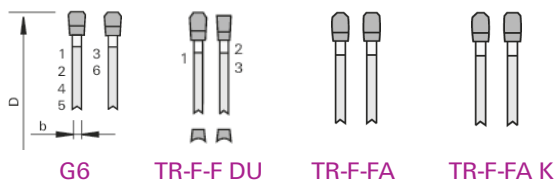
Surface material for high quality kitchen and office furniture, walls and doors, furniture and built-in fittings in shopping and leisure facilities, restaurants, administrative buildings, wash room, hospital and laboratory areas. In particular when special demands are made of ruggedness, ease of care and hygiene. In particular when special demands are made of ruggedness, ease of care and hygiene.

2. TRIMMING CUT / SIZING CUTS

2.1 PANEL TRIMMING WITH CIRCULAR SAW BLADES

Various factors are responsible for good trimming results:

Good side facing up, correct saw blade projection, feed speed, tooth configuration, tooth pitch, rpm and trimming speed. Depending on the volume to be cut, carbide-tipped (HW) or diamond-tipped (DP) circular saw blades are used. **Recommended tooth configurations:**



2.2 SIZING SAW

HW saw blades with a TR-F-F DU tooth configuration are particularly well-suited for size sawing smaller volumes.



2.3. PANEL SIZING SAW

Very good trimming results can be achieved on panel sizing machines with the new panel sizing circular saw blades in the "Q-Cut" range (Q-Cut K). Good results can also be obtained with "Q-Cut G6" range panel sizing circular saw blades. The recommended feed per tooth (fz) is between 0.07 – 0.08 mm. The maximum feed per tooth is $fz = 0.096$ mm and should not be exceeded. Tooth engagement is again performed on the good side of the panel. Good edges on both sides can only be achieved using a suitable scorer. Very good cutting results are achieved with a suitable saw blade projection. This depends on the diameter.



Circular saw blade diameter

- D = 250 mm
- D = 300 mm
- D = 350 mm
- D = 400 mm
- D = 450 mm

Saw blade projection

- approx. 15 - 20 mm
- approx. 15 - 25 mm
- approx. 18 - 28 mm
- approx. 25 - 30 mm
- approx. 25 - 33 mm

The recommended cutting speed is 60 - 90 m/sec. The upper value should be selected in the case of DP tipped circular saw blades. Try to aim for a feed per tooth of 0.07 - 0.08 mm.

Please refer to our YouTube channel for more information about the optimum saw blade projection. >>> Scan the QR-Code and watch the video on YouTube or go to www.youtube.com/leucotooling <<<



2.4. THROUGH-FEED MACHINES: HOGGERS

Sizing panels with hogs on through-feed machines has proved to be tricky. The best result in a double hogging procedure was achieved with the PowerTec III LowNoise hogger line. This result was okay, but not very good. None of the other hogger types are recommended for processing purposes. An example of the LEUCO "PowerTec III LowNoise" hogger is 185618/185619 – for a 45m/min feed.

The number of hogger teeth should be designed to suit the respective feed during processing.



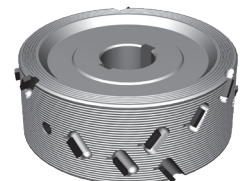
PowerTec III LowNoise

3. MILLING / EDGING

Tools with DP cutters should be used for milling jobs. Tools with a small shear angle of approx. 35° are recommended for processing purposes. Very good jointing cuts could be achieved with the LEUCO SmartJointer airFace and LEUCO DIAMAX airFace. Both tools have a shear angle of 35°. Jointing in two stages is recommended if a double jointing aggregate is available. The recommendation for an optimum tooth feed is between 0.4 - 0.6 mm. Examples of suitable jointing cutters which achieve a very good cutting quality are the LEUCO SmartJointer airFace: 186047 (125x43x30 Z3+3 symmetrical) and the LEUCO DIAMAX airFace 186399 (125x43,2x30 Z3+3 symmetrical). Tools with a high shear angle (> 43°) would produce visible burs during edging. This type of tool is therefore not recommended.



SmartJointer airFace



DIAMAX airFace



4. PROCESSING ON STATIONARY CNC MACHINES

Tools without a shear angle do not work. Diamond-tipped shank cutters with a shear angle should therefore be used for milling jobs. Shear angle range in this case from min 20° to max 48°.

The recommended feed per tooth (fz) is in the range from 0.2 – 0.27 mm.

Example:

	Z=2 (feed)	Z=3 (feed)
18.000 U/min	7 – 10 m/min	10 – 15 m/min
24.000 U/min	9 – 13 m/min	14 – 20 m/min

5. DRILLING

Dowel and through holes can be made with commonly available HW drill bits. Burring can be reduced or avoided when using standard HW drill bits by optimizing the drill parameters step-by-step. Better results are usually achieved by using VHW dowel and through hole drill bits on account of their higher rigidity. Using drill bits with special geometries to reduce cutting pressure are even more advantageous in terms of quality and longer tool life. This also applies to cylinder drill bits for hinge bores. VHW drilling pins are also very good for grid-pattern drillings $\lt; \varnothing 5 \text{ mm}$.



"Mosquito" HW through hole bits



"Mosquito" HW dowel bits



"Light" cylinder bits

6. FORMULAS

6.1. CUTTING SPEED – VC

| Unit: m/s

| Data required: diameter = D [mm];
tool speed = n [rpm]

| Calculation: $vc = (D * \pi * n) / (60 * 1000)$

6.2. TOOTH FEED – FZ

| Unit: mm

| Required data: feed speed = vf [m/min];
tool speed = n [rpm]; no. of teeth = z

| Calculation: $fz = (vf * 1000) / (n * z)$

6.3. FEED SPEED – VF

| Unit: m/min

| Required data: tooth feed = fz [mm];
tool speed = n [rpm]; number of teeth = z

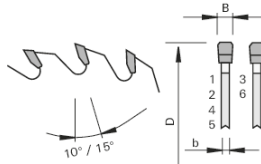
| Calculation: $vf = (fz * n * z) / 1000$



7. LEUCO TOOLS FOR PROCESSING

7.1. CIRCULAR SAW BLADES FOR PANEL SIZING SAWS

Dimensions	Description	Z	Tooth shape	Cutting material	Projection	Ident-No.
Ø 380 x 4,4 x Ø 60	Q-Cut K	72	TR-F-FA K	HL Board 04+	approx. 20 mm	192976
Ø 450 x 4,8 x Ø 60	Q-Cut G6	72	G6	HL Board 04+	approx. 20 mm	192883

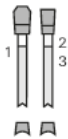


Additional saws with different diameters, cutting widths, bores and number of teeth **available upon request**.

Number of teeth and feed speed depend on cutting height and application for single panels or stack cuts.

7.2. CIRCULAR SAW BLADES FOR SIZING SAWS

Dimensions	Description	Z	Tooth shape	Cutting material	Projection	Ident-No.
Ø 303 x 3,2 x Ø 30	LowNoise	60	TR-F-F DU	HL Board 03	approx. 20 mm	193334



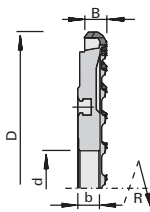
TR-F-F DU

Additional saws with different diameters, cutting widths, bores, and number of teeth **available upon request**.

Number of teeth and feed speed depend on cutting height and application for single panels or stack cuts.

7.3. HOGGERS

Dimensions	Description	Z	Cutting material	Ident-No. (L)	Ident-No. (R)
Ø 250 x 14,5 x Ø 60	PowerTec III LowNoise	20+20+5	DP	185619	185618

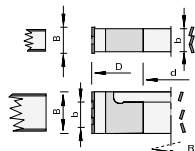


PowerTec III LowNoise

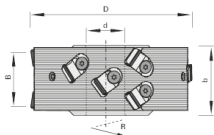
Additional PowerTec hoggers with other dimensions **available on request**.

7.4. FÜGEFRÄSER

Dimensions	Description	Z	Shear<	Cutting material	L/R	Ident-No.
Ø 125 x 43 x Ø 30 DKW	DIAMAX airFace	3+3	35°	DP	L/R	186399
Ø 125 x 43 x Ø 30 DKW	SmartJointer airFace	3+3	35°	DP	L/R	186047



DIAMAX airFace



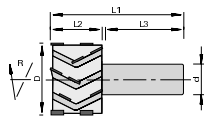
SmartJointer airFace

Additional jointing cutters with different diameters, cutting widths, bores, and numbers of teeth **available upon request**.

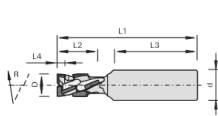


7.5. CNC SHANK - TYPE CUTTERS

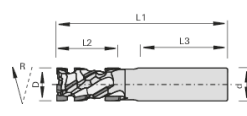
Dimensions	Description	Z	Cutting material	L/R	Ident-No.
Ø 12 x 22 x Ø 16	DP Nesting cutter, negative	2+2	DP	R	186113
Ø 12 x 22 x Ø 16	DP Nesting cutter, positive	3+3	DP	R	185514
Ø 12 x 23 x Ø 16	DP Nesting cutter, negative	3+3	DP	R	185518
Ø 20 x 38 x Ø 20	DIAREX DP highspeed cutter	2+2	DP	R	186153
Ø 18 x 28 x Ø 25	DP highspeed cutter, negative	3+3	DP	R	186118
Ø 25 x 52 x Ø 25	CM DP highspeed cutter, positive	3+3	DP	R	186133
Ø 48 x 22 x Ø 25	DP highspeed trimming cutter	4+2+4	DP	R	186140



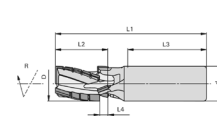
DP highspeed trimming cutter



DP Nesting cutter, negative / positive



DIAREX DP highspeed cutter



CM DP highspeed cutter, positive

Additional shank-type cutters with other diameters (Ø) and cutting lengths (L2) available on request.

7.6. THROUGH HOLE, DOWEL- AND DRILLING PINS AND CYLINDER DRILL BITS

Dimensions	Description	Cutting material	Ident-No. (L)	Ident-No. (R)
Ø 5 L1=70 x Ø 10	Standard through hole drill bits	HW	176505	176504
Ø 8 L1=70 x Ø 10	Standard through hole drill bits	HW	176507	176506
Ø 5 L1=70 x Ø 10	Mosquito through hole drill bits	VHW	183153	183152
Ø 8 L1=70 x Ø 10	Mosquito through hole drill bits	VHW	183157	183156
Ø 5 L1=70 x Ø 10	topline through hole drill bits	VHW	185742	185741
Ø 8 L1=70 x Ø 10	topline through hole drill bits	VHW	185744	185743

Dimensions	Description	Cutting material	Ident-No. (L)	Ident-No. (R)
Ø 5 L1=70 x Ø 10	Mosquito dowel drill bits	VHW	182390	182391
Ø 8 L1=70 x Ø 10	Mosquito dowel drill bits	VHW	183151	183150
Ø 5 L1=70 x Ø 10	topline dowel drill bits	VHW	185760	185759
Ø 8 L1=70 x Ø 10	topline dowel drill bits	VHW	185764	185763
Ø 5 L1=70 x Ø 10	Highspeed dowel drill bits	VHW	185772	185771
Ø 8 L1=70 x Ø 10	Highspeed dowel drill bits	VHW	185776	185775

Dimensions	Description	Cutting material	Ident-No. (L)	Ident-No. (R)
Ø 2,5 L1=57,5 x Ø 10	Standard drilling pins	VHW	183061	183061
Ø 3 L1=57,5 x Ø 10	Standard drilling pins	VHW	183062	183062

Dimensions	Description	Cutting material	Ident-No. (L)	Ident-No. (R)
Ø 15 L1=70 x Ø 10	Standard cylinder drill bits	HW	178978	172250
Ø 35 L1=70 x Ø 10	Standard cylinder drill bits	HW	178982	172254
Ø 15 L1=70 x Ø 10	"Light" cylinder drill bits	HW	184685	184684
Ø 35 L1=70 x Ø 10	"Light" cylinder drill bits	HW	184689	184688

Additional drill bits with other dimensions, cutting lengths and shank dimensions available on request.

→ Couldn't find the tool type or tool dimensions you want?
Please contact LEUCO Sales.

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TIP – LEUCO ONLINE CATALOG

LEUCO tool recommendations for processing of panels are listed in the LEUCO online catalog.



Alternatively:
Scan the QR-Code and
learn about the LEUCO
stock program.

QUICK &
EASY

- 1 www.leuco.com/products
 - 2 Click "tool" filter
 - 3 "special manufacturer materials"
 - 4 RESOPAL® Traceless
- Select saw blades, hogsers, cutters, drill bits



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