# Ecology of materials

# ZEITRAUM

# Wood and wood products

# Solid wood

We use only healthy, solid hardwood and work on it with our sound knowledge of all its specific characteristics. At present these woods are beech, oak, ash, maple, cherry and walnut. The craftsman's care begins with the selection and bringing together of individual woods and ends with treatments of the surface, when high quality oils and waxes are massaged into the finely polished surface.

This open-pored surface treatment allows the wood to breathe, take up and give out the room humidity. All woods used by ZEITRAUM stem from sustainable forests.

Wood is a renewable resource and CO<sub>2</sub>-neutral. Compared with other materials its use requires the lowest amount of energy. Furniture with an exceptionally long life is produced through careful design and manufacture.

#### Maple

**Origin:** Mountain regions of the Alps, Bavaria, Germany **Characteristics:** pure, pale color – almost whitish, hard, wavy grained, homogeneous structure

**Processing:** Surface treatment with colorless natural oil to prevent discoloration

#### Beech

Origin: Westphalia, Germany

**Characteristics:** good, hard and resistant wood, fine pores, even red-brown color **Processing:** Steaming makes the beech calmer and resistant, surface treatment with natural oils and waxes

# European Oak

**Origin:** Northern Bavaria, Germany

**Characteristics:** visible annual rings, strong and even structure, firm, hard, elastic, shock-resistant, weather-resistant

Processing: Surface treatment with colorless natural oil to prevent discoloration

#### Knotty Oak

Origin: Northern Bavaria, Germany

**Characteristics:** vibrant and natural-looking, wild character, existing branch markings and cracks are left on purpose

**Processing:** Needs expert configuration for the best overall appearance – standard oak frames and wild oak surfaces, Cracks and branch markings are sealed with black marble putty, surface treatment with colorless natural oil to prevent discoloration

# Ash

Origin: Northern Bavaria, Germany

**Characteristics:** ring-pored, pale, heavy and hard, meets the highest demands for firmness and elasticity

**Processing:** Needs expert configuration for the best overall appearance – standard ash frames and heartwood ash surfaces on request, surface treatment with colorless natural oil to prevent discoloration

# North American Black Cherry

Origin: Northwestern Pennsylvania, USA, FSC

**Characteristics:** high quality, fine-pored, dense wood, very hard, reddish-brown, in the course of time it changes from gold-brown to a deep, noble red **Processing:** easy to work with because of its straight growth and homogeneous structure enables an extremely smooth surface, surface treatment with natural oils and waxes

# European Walnut

#### Origin: Southern Germany

**Characteristics:** heavy, hard, firm, minimum shrinkage, non-bending, light gray, mouse gray to dark brown, pronounced annual rings, the wood becomes lighter in appearance if subjected to intensive UV radiation

**Processing:** wood needs to be carefully selected and worked on with due care. surface treatment with natural oils and waxes

# North American Walnut

**Origin:** Missouri, USA, American Walnut Manufacturers Association **Characteristics:** fine-pored marking, striped texture, excellent stability characteristics, extremely durable, almost black-brown, the wood becomes lighter in appearance if subjected to intensive UV radiation **Processing:** Careful selection and woodworking necessary,

surface treatment with natural oils and waxes

# Beech Compound Wood

Compound wood is more than just material – it is a medium that plays a significant role in the history of furniture design. The basis beech wood has ideal characteristics and is easily combined with solid wood. Our compound wood manufacturer was the first company in Germany to receive the PEFC certificate. **www.becker-kg.de** 

# Thick veneer

The technique of veneering was developed by the ancient Egyptians as long ago as approx 2900 BC. Thick veneering Thick veneer is one of the finest products to be produced from wood. It is solid timber of high value. ZEITRAUM thick veneer surfaces are 4mm thick sheets of wood, separated by sawing from the trunk. The individual, deliberately not mirrored combining of the veneer pieces provides an appearance similar to that of solid wood.

# Kraftplex

Kraftplex is 100% cellulose. The top quality wood fibers stem from sustainable soft wood resources. Kraftplex is manufactured without chemical additives, bleaching or binding agents. The material from renewable resources is environment-friendly, fully biologically decomposable and free from emissions. **www.well.de** 

#### MDF

This material is stable and homogensous, can be cut and polished like wood and is a real all-rounder. Finest medium-density fiberboard from rest wood and forest thinning measures, woody plant material and / or recycled wood is made by careful pressing to form a wood material that is even and homogeneous in length and width.

# Ecology of materials

# Upholstering and covering materials

# *Leather from Reinhardt – mineral tanning*

Leather is a material that directly affects the senses. It smells, it makes a noise, it is wonderful to touch and if looks good. Leather matures over the years and develops its own character. Every animal, every hide is different and looks different. The quality of the leather begins out on the pasture where animals are bred in freedom, with a healthy, nutritious and balanced diet. Jepard is a fine grain, natural leather with soft touch, Melano a Soft nubuck cattle hide leather with a fine velvet surface, and Nevada is a cattle hide leather with natural marks. The leather undergoes a high quality Nappa soft mineral tanning without the use of AZO dyes.

# Leather from Elmo

Elmo takes ecological principles into account during all stages of production. From livestock breeding and transport, from reduced water and energy consumption through to chrome-free tanning. Production waste is brought to nearby farmers as environmentfriendly fertilizer or forwarded to energy producers. Visible insect stings and small scar wounds underline the natural and wild character of leather. **www.elmoleather.com** 

# Fabrics from Rohi

Rohi has developed and produced woolen fabrics of the highest quality for more than 75 years. Rohi fabrics are made of finest Merino wool that even in its natural state already has all the characteristics needed for furniture upholstery fabric. Woolen fabrics are self-regenerating, don't crease and keep their appearance as new for years. The woolen yarn is dyed without the use of chemicals and is multi-twisted.

# Fabrics from Kvadrat

Kvadrat is the market leader in designer textile manufacture on the current market and has provided aesthetic, industrial and artistic-design textiles since 1968. For the award of the EU Flower certificate, all the processes "from cradle to grave" are examined for their finished qualities, i.e. the origin of the cotton and production stages through to finished products. Kvadrat textiles are expertly produced according to product and environment principles. www.kvadrat.dk

# Polyurethane Foam

Our foam conforms to the CFC-free "MDI Polyurethane System". MDI systems, in contrast to TDI systems are not harmful in production. When we combine these we place great value on as few substances as possible (catalyst etc.) This combination of materials is also used in medical technology (X-ray shields).

# Metals

# Aluminium

Aluminium can be completely recycled without losing its original properties. Aluminium is recognized by its silver-white surface and light weight. A thin oxide layer protects it from corrosion. Recycling treatment of aluminium waste, in comparison with the first acquisition needs only about 10% of the energy.

#### Iron

There is evidence of the use of iron dating as far back as 4000 BC. Iron is one of nature's materials. In the markets of the world today it is produced up to 50% from old metals.

#### Brass

Brass is an alloy of copper and zinc. The color of brass depends on the zinc content and can range from a light or pale golden yellow which is similar in color to real gold. The copper component leads to constant darkening, even becoming black. ZEITRAUM uses brass rods, for example for tracks.

# Other natural materials

#### Ceramics

The production of ceramic wares is one of man's oldest cultural technologies. Ceramic is an ingenious natural material with many uses and then afterwards simply returned to the natural cycle. The raw material of Italian quality stoneware is poured into a plaster form and then double fired. Between firing processes it is finished with a white glaze.

#### Linoleum

Linoleum is produced on the basis of linseed oil, natural resins, wood meal and chalk flour and natural color pigments and then spread over jute. Its name is taken from the Latin words "linum" for flax and "oleum" for oil. Linoleum has a matt, pleasantly warm, elastic surface agreeable to the touch. The natural appearance excellently matches that of wood.

# Natural paper and textile coverings

In the production of our lighting series NOON we use only white, warm gray or black textile shades outside (75% viscose (cotton waste product), 25% polyamide) and natural paper inside. This material combination has a warm and homely character and comprises almost 90% natural materials.

# **Care instructions**

Your wood surfaces will last a long time if you just follow a few basis tips.

#### Solar radiation

Direct sunlight will change the color of the wood. If possible, expose the piece of furniture to light in a uniform manner. Do not leave objects such as books or trays on a surface that is exposed to the sun for too long, because this may produce undesired patterns and outlines.

### Proximity to heater

Too much heat can dry out the wood and allows solid wood to crack.

#### Heat-generating equipment

Do not operate laptops and desktop computers on the surface on a continuous basis. It's better to put electric equipment on an insulating mat.

#### Atmospheric environment

Constant atmospheric humidity (50 to 60 percent) and a temperature of about 20°C are good for all wood surfaces and especially important for solid wood. An air humidifier helps with ambient air that is too dry, above all during the winter.

# The right care for every wood surface

Clean regularly with a soft, dry cloth. Do not use microfiber cloths. Its many small fibers have the same effect over time as fine emery paper. Too much water will damage the surface. As a result, only wipe with a damp cloth. It's best to use only a light cotton cloth. Avoid placing wet objects directly on the surface. Good prevention: Use coasters to prevent water rings. Caution: Fat-dissolving cleaning agents will damage wood. Wood is a natural product. As a result, care for your valuable furniture with natural care products so that your furnishings will provide you with years of pleasure. Care and repair kits that are coordinated precisely with your furniture and protect the wood in an optimum way are available from ZEITRAUM.

# Waxed wood surface

Wax applies a water-repellent layer to wood.

# Normal care

Dust or wipe with a damp cloth, with water or vegetable soap and with a damp, white cotton cloth. For beauty: Recondition with beeswax care emulsion. After drying, polish with a lint-free cloth. Caution: Always immediately dab off any liquid.

# Heavy soiling

Apply wax balsam cleaner, possibly using a polishing fleece, and rub off.

# Subsequent treatment

Clean with vegetable soap, then re-apply a very thin coat of wax.

# Oiled wood surface

Wood oil penetrates deep into the surface, and protects and impregnates the wood. Hard wax oil combines the advantages of wax and oil. A single layer will prevent dirt and moisture from penetrating into the wood. The result is a highly durable, but breathable surface that is very well protected.

#### Normal care

After purchase, apply oil and polish with a cloth. Dust regularly or wipe with a damp cloth, and always dry immediately. Tip: Wood oil may ignite spontaneously so never simply dispose of saturated cloths in the trash. First dampen, allow to dry and then dispose of in a non-flammable container.

#### Heavy soiling

*Clean with vegetable soap, re-sand stains and scratches (see repair), remove dust. Re-apply a thin coat of oil, and polish surface when dry.* 

#### Subsequent treatment

Sand the surface with sand paper (150 grit) every 1 to 2 years, always sanding in the direction of the grain. Remove dust, saturate a woolen cloth with oil and apply. Wait approx. 15 minutes and remove excess with a fresh woolen cloth.

# Repair

# Repairing Dings and nicks

Dings and nicks can be removed with an electric iron and a damp cloth. Sand the blemish, dampen and steam it out. Repeat the process until the desired result is achieved. Important: Never allow the electric iron to come into direct contact with the wood and the cloth should always be damp. After the damaged spot is swollen and dry, sand over it and finally re-sand with 180 grit sand paper. Then apply wood oil or hard wax oil and re-polish after 15 minutes.

# Repairing scratches and stains

Sand scratches and stains that are deep in the wood with sand paper (120 grit) until the traces disappear. Re-sand with finer sand paper and treat with oil or wax. **Tip:** Always sand in the direction of the wood grain.

# ZEITRAUM

# Textile care

# Cotton

#### Care instructions

The day-to-day care of cotton is the same as for wool. Many types of stain can, as a rule, be removed using warm water and soap. When removing stains, caution must be exercised, i.e. do not rub too hard on the fabric, since there is a risk of friction marks. Removable covers can usually be washed, although there is a risk of shrinking. This can, however, to a certain extent be minimised by replacing whilst slightly damp.

# Wool

# Care instructions

Daily care and immediate stain removal will ensure that your wool upholstery will keep looking good for many years to come. It is normally sufficient to regularly vacuum and air furniture upholstered in wool fabric. However, it is a good idea to clean the wool fabric occasionally.

Use an approved wool shampoo and follow the instructions carefully. Take care never to saturate the wool fabric. Never use undiluted cleaning agents, bleaching agents, ammonia or soap intended for hard surfaces.

# Stain removal

If you act quickly, it is not difficult to remove a spill and thus avoid staining. First, soak up the liquid with an absorbent napkin or cloth and roughen the surface of dried stain using a spoon. The treatment is undertaken from the edge of the stain towards the middle to avoid the stain spreading further. Then, treat the stain according to the following guide:

- 1 Mineral turpentine, vegetable turpentine or similar
- 2 Stain remover for fat or oil
- 3 Water with furniture shampoo added
- 4 Acetone or nail varnish remover oil-free
- 5 Cold water
- 6 Surgical spirit
- 7 Borax: 1 tsp in a little hot water in a cup, topped up with cold water
- 8 Table salt: 1 tsp in a cup of warm water
- **9** Use no. 3, adding a dash of spirit vinegar
- 10 1 tsp of detergent in 1 cup of hot water
- **11** Surgical spirit diluted with water 1:5
- 12 Household disinfectant; 1 tsp to 1 litre of water
- 13 Use no. 7, adding a dash of spirit vinegar
- 14 Cool with ice cubes in a plastic bag, break the chewing-gum/candle wax and carefully remove the loose pieces.
- 15 Run a hot iron over layers of absorbent, white paper
- 16 Contact a specialist
- 17 Vacuum thoroughly

# Type of stain and order of treatment

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Alcohol	9, 11, 7
Ballpoint pen	6, 4, 10
Blood	5 + 8, 3, <b>7</b>
Butter	14 + 15, 1 + 2, 3
Candle wax	14 + 15, 1 + 2, 3
Chewing gum	14, 2 + 4, 16
Chocolate	<b>3</b> , 1, –
Coffee (black)	13, 11, 3
Cream	3, 1, 7
Drinks based on fruit sirup	7, 3, 6 + 3
Fizzy drinks	9, 7, –
Furniture polish	1, 3, 2
Gravy	3, 1, 7
Ink (writing)	<i>3, 16,</i> –
Jam	<i>3, 7, –</i>
Juice	7, 3, 6 + 3
Lipstick	1, 2, 3
Milk	<i>8, 3,</i> 7
Nail varnish	4, 16, -
Oil and grease	1, 2, 3
Paint (oil)	1, 3, 16
Paint (water based)	5, 3, 16
Shoe polish	1, <i>2</i> , 3
Soot	17, 3, 1
Tea	3, 11, 7
Urine	3, 12, 16
Vomit	3, 12, 16
Wine	3, 13, 11



# Textile care

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# Teflon

### Care instructions

Always treat stains promptly. Sponge the stain, never rub. A gentle blotting action with an absorbent cloth or sponge is most effective. Work inwards from the outside edges to avoid spreading the stain. Blot up wet or oil-based spills quickly with an absorbent cloth, tissue or sponge. For solid or semi-solid spills, lift off excess before treating using a dull knife or spatula. If the stain has already dried, gently brush off any excess material, then dab gently with a damp cloth or sponge until it disappears. Never try to remove the stain with household detergents such as washing-up liquid. Vacuum carpets and upholstery regularly to remove accumulated dirt, which can fade colours and accelerate wear. When vacuuming upholstery, use special brushes and nozzles provided for more effective cleaning. It is recommended to have carpets and furnishings professionally cleaned from time to time. Never use water or liquid detergents on velvets.

#### IMPORTANT!

Before cleaning or treating stains, see manufacturer's care instructions. When removing a stain, test any stain-removing product (including water) on a hidden part of the furnishing to ensure fabric and/or colour is not affected. For large or serious stains, DuPont recommends you consult a professional upholstery cleaner.

N.B.: TEFLON® treatment is durable to washing and dry cleaning. Warm ironing improves performance of TEFLON®.

#### Cleaning methods Method A

Use only water-based commercial cleaning agents. Alternatively, mix 2 tablespoons of ammonia with 1 litre of water. Blot the stain gently with a cloth dampened with this solution, turning continually so that only the clean part of the cloth is in contact with the stain.

#### Method B

Use only mild, pure, water-free dry-cleaning solvents. Dampen a cloth with the solution and follow the nprocedure described in A.

# Leather

# Caring

Leather is a living material that becomes more beautiful over time if cared for correctly. Remember the following guidelines:

Never place leather furniture closer than 20-30 cm from a radiator, or in direct sunlight. Vacuum clean frequently with a soft brush, and clean surfaces subjected to heavy wear, such as arm and neck rests, as required. Water-soluble stains are easily removed by soaking and blotting with kitchen paper.

Never attempt to remove problem stains with strong solvents or chemical products. You could end up with a bigger problem that requires repairs. Instead, contact the shop that sold you the furniture and ask for assistance. If the shop staff can't help you, ask them to contact the manufacturer for expert advice.

#### Follow method B described below. Grease. oil Chocolate, coffee Sponge with lukewarm water. Wine, milk, soft drinks Follow method as described below. Blood Treat with a mixture of 2 tablespoons of salt to 1 litre of water. Rinse and blot with dry cloth. For persistent stains, sponge with ammonia solution described in method A. Wax, candle Gently scrape off wax with dull knife or spatula. Use method B or cover spot with several layers of absorbent paper and apply a warm iron. Fruit Sponge with cold water. Ballpoint pen, ink Treat with rubbing alcohol using method A. Mud Gently lift off as much as soil as possible with dull knife or spatula. Allow to dry, then vacuum. For persistent stains, use ammonia solution described in method A. Pencil Use method B, followed by a small amount of ammoniated liquid detergent. Rinse thoroughly. Use method A, followed by a small amount of ammoniated Urine, sweat liquid detergent. Gently lift off vomit and sponge thoroughly with cold water, Vomit then use method A.

# Cleaning and protection

To provide the best possible care for your leather furniture, Elmo has developed a waterbased leather care programme including a cleansing product (Leather Cleaner) and a protective product (Leather Protection).

#### Leather Cleaner

Stain removal

Our Leather Cleaner cleans the leather gently and delicately, which means it can be used frequently without risk of drying out the leather. Areas subjected to heavy wear, such as armrests, benefit from frequent cleaning. Leather Cleaner is suitable for all Elmo leather, except Nubuk.

#### Leather Protection

This product impregnates the leather, protects it from spills and stains and keeps it soft and supple. We recommend you treat your leather upholstery with Leather Protection after cleaning, ideally twice a year. Suitable for all Elmo leather, except Nubuk.

# ZEITRAUM