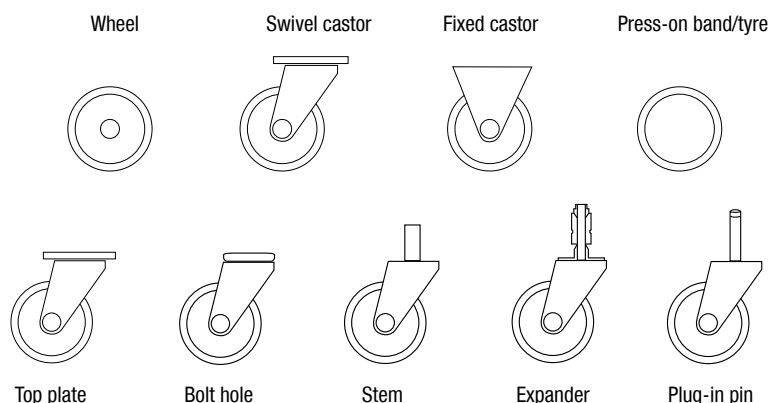


## Selection criteria for wheels and castors

### 1. Select your product.

Depending on the type of application, wheels, swivel and fixed castors or press-on bands/tyres can be used. Swivel castors will rotate whilst fixed castors will only operate in the running direction. The castors can be fitted with a top plate, bolt hole, stem, expander or plug-in pin. (Description refer to page 32, 74-79)



### 2. Determine the required load capacity.











The required load capacity of a wheel or castor is calculated from the dead weight of the transport unit and its additional load, divided by the number of wheels or castors used. The result is multiplied by a safety factor which is dependent upon the application conditions. (Description refer to page 33)

$$T = \frac{E+Z}{n} \times S$$

T = Required load capacity of the wheel or castor  
E = Dead weight of the transport unit  
Z = Maximum additional load  
n = Number of wheels or castors used  
S = Safety factor

### 3. Select from different wheel materials.

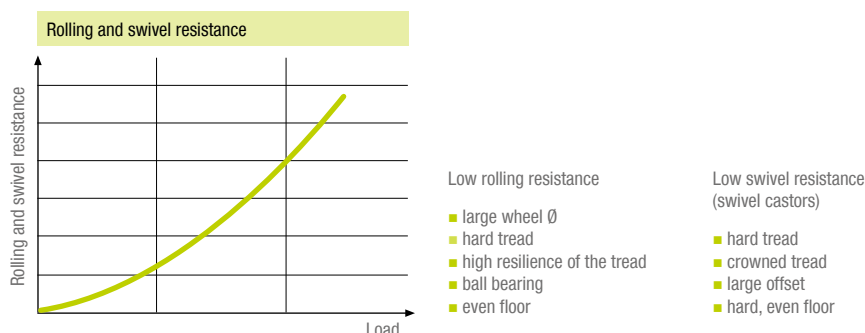
The hardness, shape and tread material have a considerable influence on the operational comfort, smooth rolling performance and starting, rolling and swivel resistance of the wheels or castors. Generally, a wheel tread or tyre should be softer than the floor otherwise damage to the floor can occur. (Description refer to page 38-40)

| Material of the tread   | Tread & tyre hardness   | Operating noise   |
|---|---|---|
| Pneumatic tyres, soft rubber                                  |  |  |
| Elastic solid rubber, super-elastic solid rubber              |  |  |
| Solid rubber, TPE, Softhane®, Besthane® Soft, silicone rubber |  |  |
| TPU, Extrathane®, Besthane®                                   |  |  |
| Steel, cast iron, nylon, polypropylene, phenolic resin        |  |  |
|   | soft —————> hard  | noisy —————> silent   |

### 4. Starting, rolling and swivel resistance. Manoeuvrability.

The starting, rolling and swivel resistance of a wheel or castor are significantly influenced by the tread, bearing type, wheel Ø, total load and condition of the floor. (Description refer to page 34-35)

The manoeuvrability of the transport unit depends on the number, type and arrangement of the castors. These factors will also have an influence on the load capacity, mobility, guidance, turning circle and stability of the vehicle. (Description refer to page 41)



## Selection criteria for wheels and castors

### 5. Select the required wheel bearing type.

To select a suitable bearing, the load, speed, environmental influences and the amount of force needed to bring the transport unit into motion need to be considered. Plain bores are simple, rugged and are greatly resistant to humidity, but have an unfavourable friction coefficient, resulting in a relatively high starting and rolling resistance.

Roller bearings are rugged, have a low rolling resistance and a low radial bearing clearance. Ball bearings offer the best starting and rolling characteristics, the lowest bearing clearance, high load capacities and are suitable for higher speeds. (Description refer to page 60-61)



Plain bore



Roller bearing



Ball bearing

### 6. Corrosion resistance. Temperature resistance. Chemical resistance.

The service life and correct functionality of a wheel or castor depend amongst other things on the surface finish and resistance of the materials to corrosion,

temperature and chemical substances. However the type and duration of exposure are also essential factors.

The table on page 36-37 shows the chemical resistance of the different materials.



Testing of hydrolysis resistance

### 7. You require options?

The function of a wheel or castor can be supplemented by different options.

For every application or requirement, suitable options are available:

Wheel and swivel head brakes to lock the rolling and swivel motion of swivel castors, foot guards to prevent foot injuries, electrically conductive treads for electrostatic discharge protection and many more.

A detailed listing of the options can be looked up on page 80-85.



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