

General Explanations

Determination for the choice of wheels and castors

1. Tyre

In the choice of the right wheel or castor the tyre is of decisive importance, because the loading capacity and the rolling resistance depends on it. Therefore the wheels and castors in this catalogue are subdivided according to the tyre as main criterium for the choice. The adjoining overview shows the essential characteristics of the different tyres. Allocated accordingly are the wheel diameter and the loading capacity.

2. Operating conditions

a) Quality of the roads

The quality of the roads decides the quality of the tyre and the wheel diameter. For bumpy grounds it is for example suitable to choose an elastic tyre with large diameter.

b) Environmental conditions

The material of wheel and castor is decided by the environmental influences. If in the adjoining overview nothing is indicated about the resistance of temperatures, chemical substances etc., exact informations should be sought from the factory.

3. Loading capacity

For the determination of the loading capacity for the product we recommend the following formula: Total weight of the appliance (= net weight + loading) : 3, because in case of bumpy grounds very often only three of four wheels are standing on. Furthermore when passing barriers overloadings can happen for a short time. According to DIN 8455 (ISO-Norm) the mentioned loading capacities are valid at a speed of 4 km/h on flat roads and at an area temperature of -10°C until $+30^{\circ}\text{C}$.

4. Place and duration of use

The place and the duration of use decides the choice of the bearing for wheel and castor.



Plain bearing

Simple and mostly maintenance-free and anti-shock bearings. At wheels out of Polyamide or cast no additional bearing bushings are used, because this material has good sliding characteristics.

Roller bearing

Robust, resistant, mostly maintenance-free bearing. The most used bearing for appliances with low speed. Has a small rolling resistance.

Groove ball bearing

Light run also at higher loadings and speeds for continuous use. Groove ball bearings are mainly employed in technical ambitious appliance castors.

Cone ball bearing

Use in heavy load wheels for high loadings and speeds. Cone ball bearings are especially qualified for the taking-up of combined (radial and axial) loadings. The bearing of the swivel housings is constructive aligned to loadings and requirements of the swivel castors.

5. Driving- and rolling resistance

The driving- and rolling resistance is decided by the power, moving a car. These resistances depend on the material of the tyre, the wheel diameter, the quality of the car, the bearing element and the loading.

The larger the wheel diameter, the smaller the roller resistance.

Wheels with Polyamide- and Polyurethane treads obtain the smallest roller-resistance on flat grounds..

6. Technical remarks

In the catalogue indicated loading capacities for wheels and castors are values at statistic load (standing load), in case of dynamic load (running load) 35 % - depending on the condition of ground - must be deducted.