The People Mover System
Application in combination with suspension track system

Application in combination with skid tracks

Application in combination with floor conveyors
installation of conveyors within the platform according to requirements
replaceable with interchangeable platforms
required time for replacement: approximately 15 minutes

People Movers
- aluminium base frame
- min. 120 mm total height
- belt options available
- internal drive
- belt speed: 0 - 10 m/min
  optional
- fire safety specification: B1 compliant version
- electrostatic discharge: ESD compliant version

Interchangeable platform / Stage
- power supply (electricity, light, water)
- lights
- oil drip trays
- servicing and access points
- variable working heights
  optional
- fire safety specification: B1 compliant version
- electrostatic discharge: ESD compliant version

Project Integration Management
- project implementation
- delivery
- assembly and installation management

Symbols

Continuous operation

Tandem drive
Variable conveyor setup

conveyor setup with platform

conveyor setup with height adjustable platform

Variable working height

typical skid conveyor configuration

height adjustment for conveyor and platform

incline and decline (up to 7°) per platform

The People Mover System
The People Mover System

Roller cover

Drive unit with spring loaded PVC clearing strips prevents collection of small parts

Dirt collection tray

easy cleaning from above

Electrical connection

connection terminal with C4A circuit breaker in each conveyor
various connections for subsequent and parallel units

Potentiometer

speed adjustment by potentiometer

PLC

external speed adjustment

maintenance free drive and idler unit, replaceable from above
The People Mover System

Conveyor

- Type 5721
- Type 5722
- Type 5723

Belt type

- Habasit M2420 Flat Top 1"
- Habasit M2423 Non Slip 1"
- Forbo Siegling S8-0 PLT
- Uni-chains QNB-C
- Uni-chains QNB-Rough
- System Plast 2250 FT

Interchangeable platform / Stage

- Interchangeable platform
- Stage

Drive

- AC servo motor with servo drive
  1. Type Minas A4
- Planetary gear box
  2. Type PLE 80/90

Control methods

- servo drive inside the conveyor
  - speed adjustment via potentiometer
  - speed adjustment according to external index value
- servo drive with external control panel
  - speed adjustment according to external index value

Control

- layout
  - parallel
  - serial
- master conveyor
- index value 0-10 V
- conveyor

- Block Diagram
People mover
Type 5.721
height: 120 mm
• motor capacity 750 Watt
• internal drive
• stainless steel sliding surface
• 320 kg continuous load

Implementation
An integrated design (motor, control, drive shaft and bearings) housed within the conveyor frame creates a uniform exterior surface. High stability and drive capacity combined with low overall height and weight allow for a variety of applications. Stainless steel surfaces cater to abrasive dust environments.

Technical data

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Specification</th>
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<td>320 kg continuous load (4 people)</td>
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<td>app. 600 - 1,540 mm</td>
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<td>total width</td>
<td>app. 650 - 1,600 mm</td>
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<tr>
<td>total length</td>
<td>1,500 - 10,000 mm</td>
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<tr>
<td>base frame</td>
<td>aluminium extrusion, unanodized</td>
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<tr>
<td>sliding surface</td>
<td>stainless steel sheet</td>
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<tr>
<td>belt material</td>
<td>as required</td>
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<tr>
<td>motor</td>
<td>AC servo motor with servo drive</td>
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<td>PN 750 W</td>
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<td>torque</td>
<td>nominal 2.4 Nm, peak 7.1 Nm</td>
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<td>nominal RPM</td>
<td>1,100 min⁻¹</td>
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<tr>
<td>transmission</td>
<td>planetary gear box PLE 80/90</td>
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<tr>
<td>ratio</td>
<td>i40 / i100</td>
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<tr>
<td>torque</td>
<td>110 - 120 Nm</td>
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<tr>
<td>speed</td>
<td>0 - 7 m/min (± 1.5%), acceleration time 2 - 3 sec.</td>
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<td>drive orientation</td>
<td>pulling in direction of travel</td>
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<tr>
<td>control</td>
<td>servo drive inside the conveyor or external</td>
</tr>
<tr>
<td></td>
<td>speed adjustment via potentiometer</td>
</tr>
<tr>
<td></td>
<td>or according to external index value</td>
</tr>
</tbody>
</table>

Adjusting range 3 mm

AA = Axle distance
BG = Belt width
LE = Installation dimension
LG = Total length

25

LE = BG + 15

BB

view

patent No. 102007017628
People mover
Type 5.722
height: 120 mm
- motor capacity 750 Watt
- internal drive
- PVC sliding surface
- 600 kg continuous load

Implementation
An integrated design (motor, control, drive shaft and bearings) housed within the conveyor frame creates a uniform exterior surface.
High stability and drive capacity combined with low overall height and weight allow for a variety of applications. The PVC sliding surface reduces the friction, which allows to transport high loads at a reduced drive power.

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<td>PN 750 W</td>
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<tr>
<td>torque:</td>
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<td>nominal 2.4 Nm, peak 7.1 Nm</td>
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<td>nominal RPM:</td>
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<tr>
<td>1,100 min⁻¹</td>
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<tr>
<td>transmission:</td>
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<tr>
<td>planetary gear box PLE 80/90</td>
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<tr>
<td>ratio:</td>
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<tr>
<td>i40 / i100</td>
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<td>110 - 120 Nm</td>
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<td>speed:</td>
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<td>0 - 7 m/min (± 1.5%), acceleration time 2 - 3 sec.</td>
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<td>drive orientation:</td>
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<td>pulling in direction of travel</td>
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<tr>
<td>control:</td>
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<tr>
<td>servo drive inside the conveyor or external</td>
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<tr>
<td>speed adjustment via potentiometer</td>
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<tr>
<td>or according to external index value</td>
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<table>
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<tr>
<td>2g</td>
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<tr>
<td>25</td>
</tr>
</tbody>
</table>

AA = Axle distance
BG = Belt width
LE = Installation dimension
LG = Total length
People mover with plastic link chain

People mover
Type 5.723
height: 150 mm
• motor capacity 2 × 750 Watt
• internal drive
• tandem drive
• PVC sliding surface
• 1.200 kg continuous load

Implementation
An integrated design (motor, control, drive shaft and bearings) housed within the conveyor frame creates a uniform exterior surface.
High stability and drive capacity combined with low overall height and weight allow for a variety of applications. The PVC sliding surface reduces the friction, which allows to transport high loads at a reduced drive power.

Technical data

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<td>belt width</td>
<td>app. 600 - 1,540 mm</td>
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<td>app. 650 - 1,600 mm</td>
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<tr>
<td>total length</td>
<td>1,500 - 10,000 mm</td>
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<td>aluminium extrusion, unanodized</td>
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<td>belt material</td>
<td>as required</td>
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<tr>
<td>motor</td>
<td>2 × AC servo motor with servo drive</td>
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<tr>
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<td>2 × PN 750 W = 1,500 W</td>
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<td>transmission</td>
<td>2 × planetary gear box PLE 80/90</td>
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<tr>
<td>ratio</td>
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<td>torque</td>
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<td>speed</td>
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<td>control</td>
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<td>speed adjustment via potentiometer</td>
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<td></td>
<td>or according to external index value</td>
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</table>

AA = Axle distance  
BG = Total width  
LE = Installation dimension  
LG = Total length  
PVC panel  

BB  

8 mm  

adjusting range 3 mm  

view BB  

8 mm

25

2G = 1 + GB + 54

L = BG + 105

L = BG + 54
People mover with plastic link chain

Base frame

Assembly
MayTec custom extrusions provide high longitudinal and lateral stability

Height adjustibility

Application
Accessible from top with socket wrench
The system allows a fast and easy adjustment to the floor conditions.

Side cover

adjustable cover strip
side cover can be adjusted to compensate for uneveness of flooring

Functional lengths

\[ FL = \text{functional length} \]
\[ LG = \text{total length} \]
\[ ÜL = \text{transmission length} \]
Servo drive
Type Minas A4
- RS232 interface cable
- PANATERM® software

**Error codes**

<table>
<thead>
<tr>
<th>#</th>
<th>Description</th>
<th>#</th>
<th>Description</th>
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<tbody>
<tr>
<td>11</td>
<td>control undervoltage</td>
<td>41</td>
<td>* absolute value - overflow error</td>
</tr>
<tr>
<td>12</td>
<td>overvoltage error</td>
<td>42</td>
<td>absolute revolution speed exceeded</td>
</tr>
<tr>
<td>13</td>
<td>mains undervoltage</td>
<td>44</td>
<td>* absolute revolution counter</td>
</tr>
<tr>
<td>14</td>
<td>* over current protection</td>
<td>45</td>
<td>* multiple revolution counter</td>
</tr>
<tr>
<td>15</td>
<td>* temperatur exeedence</td>
<td>47</td>
<td>* absolute status error</td>
</tr>
<tr>
<td>16</td>
<td>capacity overload</td>
<td>48</td>
<td>* encoder z-phase error</td>
</tr>
<tr>
<td>18</td>
<td>* overload on ballast resistor</td>
<td>49</td>
<td>* encoder CS signal error</td>
</tr>
<tr>
<td>21</td>
<td>* encoder communication error</td>
<td>50</td>
<td>* external scale of length status error 0</td>
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<tr>
<td>22</td>
<td>* encoder data error</td>
<td>51</td>
<td>* external scale of length status error 1</td>
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<tr>
<td>24</td>
<td>position discrepancy</td>
<td>52</td>
<td>* external scale of length status error 2</td>
</tr>
<tr>
<td>25</td>
<td>* position discrepancy of external encoder</td>
<td>53</td>
<td>* external scale of length status error 3</td>
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<tr>
<td>26</td>
<td>RPM exceedence</td>
<td>54</td>
<td>* external scale of length status error 4</td>
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<td>27</td>
<td>electronic gear box</td>
<td>55</td>
<td>* external scale of length status error 5</td>
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<tr>
<td>28</td>
<td>* data error from external locator</td>
<td>65</td>
<td>torque limit for anti-clockwise rotation</td>
</tr>
<tr>
<td>29</td>
<td>overflow of pulse error counter</td>
<td>66</td>
<td>torque limit for anti-clockwise rotation</td>
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<tr>
<td>34</td>
<td>software limitation</td>
<td>95</td>
<td>* automatic motor identification</td>
</tr>
<tr>
<td>35</td>
<td>* data transfer error from external scale of length</td>
<td></td>
<td></td>
</tr>
<tr>
<td>36</td>
<td>* EEPROM parameter error</td>
<td>other</td>
<td></td>
</tr>
<tr>
<td>37</td>
<td>* EEPROM test code error</td>
<td>no.</td>
<td>other error</td>
</tr>
<tr>
<td>38</td>
<td>limit switch inputs</td>
<td></td>
<td></td>
</tr>
<tr>
<td>39</td>
<td>discrepancy to index value</td>
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<td></td>
</tr>
<tr>
<td>40</td>
<td>absolute value - system failure</td>
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</table>

**Comments**

The RS232 interface cable is integrated with the cable harness located at the conduit end of the drive. PANATERM® software is supplied on a data storage device.

Error shutdowns marked with *, cannot be deleted by A-CLR.
Switch off electricity, eliminate cause of failure, then switch electricity back on.

The following error codes are not listed in the error log:

<table>
<thead>
<tr>
<th>#</th>
<th>Description</th>
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<tbody>
<tr>
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<td>control and undervoltage</td>
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<td>13</td>
<td>mains undervoltage</td>
</tr>
<tr>
<td>36</td>
<td>EEPROM parameter error</td>
</tr>
<tr>
<td>37</td>
<td>EEPROM test code error</td>
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<tr>
<td>38</td>
<td>limit switch inputs</td>
</tr>
<tr>
<td>95</td>
<td>automatic motor identification</td>
</tr>
</tbody>
</table>
Plastic link chain basics

Plastic link chain

Advantages

1. Non-slip traction created by pinion drive
2. Chain tensioning set at minimal levels
3. Trouble free and low maintenance plastic link chain belt ensures tracking
4. Plastic chain links can be used through a wide temperature range
5. No special tools required for assembly of endless plastic chain link belts
6. Damaged plastic links are quickly and easily replaced
7. Minimal spare parts inventory. Plastic links generally replaced in short pieces
8. High lateral stability
9. Easy cleaning
10. Good sliding value with low friction
11. Scuff and scratch resistant materials
12. Fire safety specification: B1 compliant version
13. ESD: Electrostatic discharge compliant version
<table>
<thead>
<tr>
<th>Producer</th>
<th>Belt surface</th>
<th>Anti-slip specification class</th>
<th>&lt; R9</th>
<th>R9</th>
<th>R10</th>
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<td><strong>Habasit</strong></td>
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<tr>
<td></td>
<td>smooth</td>
<td>M2420 Flat Top 1&quot;</td>
<td></td>
<td>12</td>
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<tr>
<td></td>
<td>plate with lug pattern</td>
<td>M2423 Non Slip 1&quot;</td>
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<tr>
<td><strong>Forbo Siegling</strong></td>
<td>smooth</td>
<td>S8-0 FLT</td>
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<td>14</td>
<td></td>
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<tr>
<td><strong>uni-chains</strong></td>
<td>smooth</td>
<td>QNB-C</td>
<td></td>
<td>15</td>
<td>rough surface QNB-Rough</td>
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<tr>
<td><strong>Forbo Siegling</strong></td>
<td>smooth</td>
<td>2250 FT</td>
<td></td>
<td>17</td>
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</tbody>
</table>
Habasit
Type M2420 Flat Top 1"
• smooth plastic link chain surface

Chain module

Technical data
- chain pitch: 1" (25.4 mm)
- chain thickness: 8.7 mm
- plastic link chain surface: closed, smooth
- anti-slip property: R9 according DIN 51130
- standard widths: X³ 18 - 19

Sprocket

Technical data
- number of teeth: 12 Z
- pitch circle Ø: 99.5 mm
- hub width: 14 mm
- suitable for plastic link chain: Type M2420 Flat Top 1"
- chain pitch: 1" (25.4 mm)
- material: PA (Polyacetal) natural

Habasit product range
Type M2420 Flat Top 1"

<table>
<thead>
<tr>
<th>Fire safety specification</th>
<th>Electrical conductivity</th>
<th>Material</th>
<th>Colour</th>
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</thead>
<tbody>
<tr>
<td>old B₁₁ - s₁₁ new C₁₁ - s₁₁</td>
<td>0% ESD</td>
<td>PP, POM</td>
<td>black, grey, dark grey</td>
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<tr>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
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<td>min. 25% ESD</td>
<td>PP, POM</td>
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</tr>
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<td>min. 33% ESD</td>
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<td>min. 33% ESD</td>
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<td>100% ESD</td>
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</table>
Habasit
Type M2423 Non Slip 1"
- plastic link chain surface with lug pattern

Chain module

Technical data
- chain pitch: 1" (25.4 mm)
- chain thickness: 8.7 + 1.2 mm
- plastic link chain surface: closed with lug pattern
- anti-slip property: R10 according DIN 51130
- standard widths: 18-19

Sprocket

Technical data
- number of teeth: 12 Z
- pitch circle Ø: 99.5 mm
- hub width: 14 mm
- suitable for plastic link chain: Type M2423 Non Slip 1"
- chain pitch: 1" (25.4 mm)
- material: PA (Polyacetal) natural

Habasit product range
Type M2423 Non Slip 1"

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<th>Electrical conductivity</th>
<th>Material</th>
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<td>x</td>
<td>min. 33% ESD</td>
<td>PP</td>
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<td>100% ESD</td>
<td>PP</td>
<td>x</td>
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</tbody>
</table>
Forbo Siegling
Type S8-0 FLT
- smooth plastic link chain surface

Chain module

Technical data
- chain pitch: 1" (25.4 mm)
- chain thickness: 10.5 mm
- plastic link chain surface: closed, smooth
- anti-slip property: standard widths: 18 - 19

Sprocket

Technical data
- number of teeth: 12 Z
- pitch circle Ø: 99.7 mm
- hub width: 14 mm
- suitable for plastic link chain: Type S8-0 FLT
- chain pitch: 1" (25.4 mm)
- material: PA (Polyacetal) natural

Forbo Siegling product range
Type S8-0 FLT

<table>
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<td>C₁₀ → s₁</td>
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<tr>
<td>B₂</td>
<td>0% ESD</td>
<td>PP</td>
<td>grey</td>
</tr>
<tr>
<td></td>
<td>min. 25% ESD</td>
<td>POM</td>
<td>x</td>
</tr>
<tr>
<td></td>
<td>min. 33% ESD</td>
<td>POM</td>
<td>x</td>
</tr>
<tr>
<td></td>
<td>100% ESD</td>
<td>POM</td>
<td>x</td>
</tr>
</tbody>
</table>
uni-chains
Type QNB-C
• smooth plastic link chain surface

Technical data
chain pitch: 1" (25.4 mm)
chain thickness: 8.8 mm
plastic link chain surface: closed, smooth
anti-slip property: R9 according DIN 51130
standard widths: 18 - 19

Technical data
number of teeth: 12 Z
pitch circle Ø: 98.1 mm
hub width: 14 mm
suitable for plastic link chain: Type QNB-C
chain pitch: 1" (25.4 mm)
material: PA (Polyacetal) natural

Fire safety specification
old | new
--- | ---
B₁ | C₁

Electrical conductivity | Material | Colour
--- | --- | ---
0% ESD | PP POM | x
min. 25% ESD | PP POM | x
min. 33% ESD | PP POM | x
100% ESD | PP POM | x

Material | Colour
--- | ---
black | grey | dark grey

PP | x
POM | x

uni-chains product range
Type QNB-C
uni-chains
Type QNB-Rough
• plastic link chain surface with rough surface

plastic link chain closed with rough surface

Chain module

Technical data
chain pitch: 1" (25.4 mm)
chain thickness: 9.6 mm
plastic link chain surface: closed, with rough surface
anti-slip property: R10 according DIN 51130
standard widths: 18 - 19

Sprocket

Technical data
number of teeth: 12 Z
pitch circle Ø: 98.1 mm
hub width: 14 mm
suitable for plastic link chain: Type QNB-Rough
chain pitch: 1" (25.4 mm)
material: PA (Polyacetal) natural

uni-chains product range
Type QNB-Rough

<table>
<thead>
<tr>
<th>Fire safety specification</th>
<th>Material</th>
<th>Colour</th>
</tr>
</thead>
<tbody>
<tr>
<td>0% ESD</td>
<td>PP POM</td>
<td>x</td>
</tr>
<tr>
<td>min. 25% ESD</td>
<td>PP POM</td>
<td>x</td>
</tr>
<tr>
<td>min. 33% ESD</td>
<td>PP POM</td>
<td>x</td>
</tr>
<tr>
<td>100% ESD</td>
<td>PP POM</td>
<td>x</td>
</tr>
</tbody>
</table>

PP | POM

Electrical conductivity | B H 1 | C H 1 | Material | black | grey | dark grey |
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>B1</td>
<td>0% ESD</td>
<td>PP POM</td>
<td>x</td>
<td>18</td>
<td>19</td>
<td></td>
</tr>
<tr>
<td>B2</td>
<td>0% ESD</td>
<td>PP POM</td>
<td>x</td>
<td>18</td>
<td>19</td>
<td></td>
</tr>
</tbody>
</table>
System Plast
Type 2250 FT
• smooth plastic link chain surface

Chain module

Technical data
chain pitch: 1" (25.4 mm)
chain thickness: 8.7 mm
plastic link chain surface: closed, smooth
anti-slip property: standard widths: 18 - 19

Sprocket

Technical data
number of teeth: 12 Z
pitch circle Ø: 98.14 mm
hub width: 14 mm
suitable for plastic link chain: Type 2253 FT
chain pitch: 1" (25.4 mm)
material: PA (Polyacetal) natural

System Plast product range
Type 2250 FT

<table>
<thead>
<tr>
<th>Fire safety specification</th>
<th>Electrical conductivity</th>
<th>Material</th>
<th>Colour</th>
</tr>
</thead>
<tbody>
<tr>
<td>old</td>
<td>new</td>
<td>0% ESD</td>
<td>PP</td>
</tr>
<tr>
<td>B1</td>
<td>x</td>
<td></td>
<td>POM</td>
</tr>
<tr>
<td></td>
<td>x</td>
<td>min. 25% ESD</td>
<td>PP</td>
</tr>
<tr>
<td></td>
<td>x</td>
<td>min. 33% ESD</td>
<td>POM</td>
</tr>
<tr>
<td></td>
<td>x</td>
<td>100% ESD</td>
<td>POM</td>
</tr>
<tr>
<td>B2</td>
<td>0% ESD</td>
<td>PP</td>
<td>POM</td>
</tr>
<tr>
<td></td>
<td>min. 25% ESD</td>
<td>POM</td>
<td></td>
</tr>
<tr>
<td></td>
<td>min. 33% ESD</td>
<td>PP</td>
<td>POM</td>
</tr>
<tr>
<td></td>
<td>100% ESD</td>
<td>PP</td>
<td>POM</td>
</tr>
</tbody>
</table>
### Conveyor width for plastic link chain type

<table>
<thead>
<tr>
<th>ESD</th>
<th>width (mm)</th>
<th>width (mm)</th>
<th>width (mm)</th>
<th>width (mm)</th>
<th>length (mm) max.</th>
</tr>
</thead>
<tbody>
<tr>
<td>w/o</td>
<td>belt</td>
<td>conveyor 1</td>
<td>belt</td>
<td>conveyor 1</td>
<td></td>
</tr>
<tr>
<td>595</td>
<td>649</td>
<td>610</td>
<td>664</td>
<td>607</td>
<td>595</td>
</tr>
<tr>
<td>680</td>
<td>734</td>
<td>686</td>
<td>740</td>
<td>683</td>
<td>680</td>
</tr>
<tr>
<td>765</td>
<td>819</td>
<td>762</td>
<td>816</td>
<td>759</td>
<td>765</td>
</tr>
<tr>
<td>850</td>
<td>904</td>
<td>838</td>
<td>892</td>
<td>835</td>
<td>850</td>
</tr>
<tr>
<td>935</td>
<td>989</td>
<td>914</td>
<td>968</td>
<td>911</td>
<td>935</td>
</tr>
<tr>
<td>1,020</td>
<td>1,074</td>
<td>991</td>
<td>1,045</td>
<td>988</td>
<td>1,020</td>
</tr>
<tr>
<td>1,105</td>
<td>1,159</td>
<td>1,067</td>
<td>1,121</td>
<td>1,064</td>
<td>1,105</td>
</tr>
<tr>
<td>1,190</td>
<td>1,244</td>
<td>1,143</td>
<td>1,197</td>
<td>1,140</td>
<td>1,190</td>
</tr>
<tr>
<td>1,275</td>
<td>1,329</td>
<td>1,219</td>
<td>1,273</td>
<td>1,216</td>
<td>1,275</td>
</tr>
<tr>
<td>1,360</td>
<td>1,414</td>
<td>1,295</td>
<td>1,349</td>
<td>1,292</td>
<td>1,360</td>
</tr>
<tr>
<td>1,445</td>
<td>1,499</td>
<td>1,371</td>
<td>1,425</td>
<td>1,368</td>
<td>1,445</td>
</tr>
<tr>
<td>1,530</td>
<td>1,584</td>
<td>1,447</td>
<td>1,501</td>
<td>1,444</td>
<td>1,530</td>
</tr>
</tbody>
</table>

1) conveyor width = belt width + 54 mm

### Width of chain module

- **short chain module**
  - width: 85 mm
  - length: 114.3 mm
  - max. length: 76.2 mm
  - cut pattern: 85 mm

- **long chain module**
  - width: 170 mm
  - length: 228.6 mm
  - max. length: 152.4 mm
  - cut pattern: 170 mm

- **cut pattern**
  - width: 17 mm
  - length: 12.66 mm
  - max. length: 12.66 mm
  - cut pattern: 17 mm
Conveyor width for plastic link chain type

Fire safety class B1

Anti-slip specification class

According DIN 51130 there are five different anti-slip specification classes R9 to R13. Higher classes represent higher anti-slip property. Slip classes are specified by mounting the material to the face of a ramp, oil is then poured over the surface and a subject walks up the ramp. The incline is gradually increased until slipping occurs. The table below determines the anti-slip class.
Fire safety classes according DIN 4102-1

Fire safety class A
Materials of fire safety class A must be non-combustible.
Materials like: concrete, brickwork, soil (sand, gravel, etc.) cement, mortar, stone, architectural ceramics, glass, foam glass, cast iron, steel and aluminium belong to fire safety class A.

Fire safety class B
Flammable

- **Fire safety class B1**
  Flame resistant materials belong to fire safety class B1.
  Materials such as flame retardant wood and rigid foam plastic belong to this fire safety class.
  Fire must extinguish once the fire source has been removed

- **Fire safety class B2**
  Normally flammable materials belong to fire safety class B2.
  Materials like wooden parts and reconstituted timber products with a thickness > 2 mm.

- **Fire safety class B3**
  Easily flammable materials belong to fire safety class B3.
  Materials like wooden parts and reconstituted timber products with a thickness < 2 mm.
  Cardboard, straw or paper may not be used.

Requirements for automotive applications

Fire safety class B1
In order to comply with fire safety class B1, plastic link chain modules are manufactured from flame resistant materials.
The plastic link chains are assembled from injection molded modules secured by either plastic or metal rods.

Fire safety class "new" according DIN EN 13501-1 for floorings

<table>
<thead>
<tr>
<th>naming by construction supervision</th>
<th>Fire safety class &quot;old&quot; DIN 4102-1</th>
<th>Fire safety class &quot;new&quot; DIN EN 13501-1</th>
<th>critical thermal flow kW/m²</th>
<th>no smoke</th>
</tr>
</thead>
<tbody>
<tr>
<td>flame resistant floorings</td>
<td>B1</td>
<td>B₂ - s₁</td>
<td>&gt; 8</td>
<td>x</td>
</tr>
<tr>
<td></td>
<td></td>
<td>C₂ - s₁</td>
<td>4.5 to 7.9</td>
<td>x</td>
</tr>
<tr>
<td>normally flammable floorings</td>
<td>B2</td>
<td>A₂ - s₂</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>B₁ - s₂</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>C₁ - s₂</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>D₁ - s₁</td>
<td>x</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>D₁ - s₂</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>E₁</td>
<td></td>
<td></td>
</tr>
<tr>
<td>easily flammable floorings</td>
<td>B3</td>
<td>F₁</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
What is ESD?

Electro Static Discharge

Transition of electrical charges between bodies with different electrostatic potentials. Typically caused by direct contact or induced by an electrostatic field.

How is ESD created?

Almost all equipment, machines and vehicles are designed using electronic components, switches and control elements. The micro electronic components which make up these systems are sensitive to electronic spikes and unexpected voltages.

An electrical charge is created when differing materials rub against, or come in contact with each other. For example, if a person wearing clothing made from different types of materials walks along an electrically isolated surface, a charge will develop on the surface of their body. If this charged surface (the person’s skin in this case) is then earthed, a discharge will occur from the person to the earthed surface. Electronic components can be easily damaged by such a discharge as high voltages are created.

Plastic module patterns

Alternate pattern with ESD modules (colour white)
Assembly in section patterns
Ratio of the ESD modules 25% to 100% depending on the assembly pattern

Example: pattern for chain width 1,020 mm
ESD version
Measuring method according to:
DIN EN 61340

1. Electrical grounding resistance
   target value: \(< 1 \times 10^9 \) Ω

   measuring method with analyser Metriso 2000 with electrode model 850

   Engineering standards
   DIN EN 61340-4-1
   DIN EN 61340-5-1
   DIN EN 61340-2-3

   analyser electrode model 850
   dimensions:
   Ø contact rubber 63.5 mm / height 120 mm

2. Systematic resistance
   person - shoe - flooring
   target value:
   \(7.5 \times 10^5 \) Ω to \(3.5 \times 10^7 \) Ω

3. Persons charging - walking test
   target value: \(< 100 \) V

   measuring method with analyser Metriso 2000 with manual electrode model 45

   Engineering standards
   DIN EN 61340-4-5
   DIN EN 61340-5-1

   manual electrode model 45
   dimensions:
   Ø 25 mm / length 120 mm
Interchangeable platform
placeholder for people mover
- 500 kg/m² maximum load

Technical data
max. load: 500 kg/m²
height:
  type 1: min. 120 to max. 170 mm adjustable
  type 2: min. 150 to max. 220 mm adjustable
total width (BG): 500 - 1,600 mm
total length (LG): 100 - 7,000 mm
base frame: aluminium extrusion, unanodized

BG = total width
LG = total length
Stage

- 500 kg/m² maximum load

Technical data

- max. load: 500 kg/m²
- height:
  - type 1: min. 120 to max. 170 mm adjustable
  - type 2: min. 150 to max. 220 mm adjustable
- total width (BG): □□□□□
- total length (LG): □□□□□
- base frame: aluminium extrusion, unanodized

BG = total width
LG = total length

view AA
**Base frame**

**Assembly**
MayTec custom extrusions provide high longitudinal and lateral stability

**Height adjustibility**

**Application**
Accessible from top with socket wrench
The system allows a fast and easy adjustment to the floor conditions.

**Side cover**

① adjustable cover strip
② adjustable cover strip
Side cover can be adjusted to compensate for uneveness of flooring
Plastic sheet
type RESOPAL® HPL plate

Technical data
- Sheet thicknesses: 10, 12, 13, 14, 16, 18, 20, 22, 24, 25, 26 mm
- Sheet size: 2,180 × 915, 1,320 mm
- Surface: HPL (high pressure laminate) - special coating paper with Melamin Formaldehyde resin
- Colour: decor at discretion
- Anti-slip coefficient: R9 according DIN 51130/BGR 181, step safety according Schuster
- Core material: paper with Melamin Formaldehyde resin
- Back side: HPL lamination (same as front side)
- Electrical conductivity: ESD $10^9$ - $10^{11}$ Ω
- Edges: 2 × 45° chamfer
- Silicon free: yes

Surface HPL coating

<table>
<thead>
<tr>
<th>Type</th>
<th>Fire safety class</th>
<th>Electrical conductivity</th>
<th>Surface</th>
<th>Abrasion resistance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Resopal Solid F</td>
<td>B1</td>
<td>0</td>
<td>Resopal HPL</td>
<td>AC 5</td>
</tr>
<tr>
<td></td>
<td></td>
<td>ESD</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Resopal Solid</td>
<td>B2</td>
<td>0</td>
<td>Resopal HPL</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>ESD</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The chart shows typical values of electrical resistance of the conductive RESOPAL multi layer panel

<table>
<thead>
<tr>
<th>test method</th>
<th>value</th>
</tr>
</thead>
<tbody>
<tr>
<td>electrical resistance (in reference to a grounded point)</td>
<td>$10^7$ Ω to $10^8$ Ω DIN EN 61340-2-3</td>
</tr>
<tr>
<td>surface resistance (antistatic)</td>
<td>$10^8$ Ω to $10^{11}$ Ω DIN EN 61340-2-3 EN 438-2</td>
</tr>
<tr>
<td>other properties</td>
<td>refer to PDB HPL</td>
</tr>
</tbody>
</table>

The measurements are performed with a measurement voltage of 100 V and a 2.5 kg electrode DIN EN 61340-5-1 and DIN EN 61340-4-1 Ed.2 with conductive rubber.
The electrical resistance is tested between the top surface of the material and a grounded conductive inside layer of the HPL sheet.
The electrical resistance of the surface is tested with two 2.5 kg electrodes connected to the panel surface.
Environmental conditions: standard climate with 18 - 25° C, relative humidity 50 - 65 %
Plastic sheet
type DELIGNIT® industrial flooring

Technical data
- **Sheet thicknesses:** 20, 25, 30, 40 mm
- **Sheet size:** 2,500 × 1,000, 1,300, 1,500 mm
- **Core material:** construction plywood according EN 636-2 as supporting construction material for interior zones according CE 0765-CPD-0415 Blomberger Holzindustrie B. Hausmann GmbH & Co. KG 04 EN 13986, EN 636-2 E3
- **Wood type:** beech, Brinell hardness HB = 34 N/mm²
- **Back side:** white resin coating or ESH painting
- **Edges:** 2 × 45° chamfer, transparent coating for splash guard
- **Glueing:** according EN 314-2 (class 2) adequate for most areas and protected outside areas
- **Silicon free:** yes

Surface painted

<table>
<thead>
<tr>
<th>Type</th>
<th>Fire safety class</th>
<th>Electrical conductivity</th>
<th>Surface</th>
<th>Abrasion resistance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Professional L</td>
<td>B1</td>
<td>ESD</td>
<td>paint ESH-ESD</td>
<td>10.000 Taber</td>
</tr>
<tr>
<td>Professional B</td>
<td></td>
<td>DIF</td>
<td>lamination DIF</td>
<td>750 Taber</td>
</tr>
<tr>
<td>Basic L</td>
<td></td>
<td>ASF</td>
<td>paint ESH</td>
<td>10.000 Taber</td>
</tr>
<tr>
<td>Eco F</td>
<td>B2</td>
<td></td>
<td>film coating</td>
<td>750 Taber</td>
</tr>
<tr>
<td>Eco L</td>
<td></td>
<td></td>
<td>paint</td>
<td></td>
</tr>
</tbody>
</table>

Technical data
- **Surface:** painting or coating
- **Colours:** RAL 7008, 7035, 7045, 8000, transparent
- **Anti-slip coefficient:** R9 according DIN 51130/BGR 181 step safety according Schuster
- **Electrical conductivity:**
  - **DIF:** $1 \times 10^6 \Omega$ to $1 \times 10^9 \Omega$
  - **ESD:** $7.5 \times 10^5 \Omega$ to $3.5 \times 10^7 \Omega$

Surface HPL coating

<table>
<thead>
<tr>
<th>Type</th>
<th>Fire safety class</th>
<th>Electrical conductivity</th>
<th>Surface</th>
<th>Abrasion resistance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Basic HPL  B1</td>
<td>D_f - s1</td>
<td>ESD</td>
<td>Resopal HPL</td>
<td>AC 5</td>
</tr>
<tr>
<td>Basic HPL</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Technical data
- **Surface:** HPL (high pressure laminate) - special coating
- **Colour:** beech decor
- **Anti-slip coefficient:** R9 according DIN 51130/BGR 181 step safety according Schuster
- **Electrical conductivity:** $10^9 \Omega$ to $10^{11} \Omega$
Variable working height

typical skid conveyor configuration

Combination possibilities

- Belt
- Stage
- Interchangeable platform

120–220 mm

200–500 mm

200–500 mm
AC servo motor with servo drive
type Minas A4

**Technical data**
- Motor speed: 3,000 RPM
- Voltage of connection: 230 V
- Control voltage: 230 V
- Voltage deviation: +10% -15%

1. AC servo motor
2. Servo drive

<table>
<thead>
<tr>
<th>Description</th>
<th>Weight</th>
<th>Product-No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Minas A4 400 W</td>
<td>1.2 kg</td>
<td>5MPAN.MSMD042P1C</td>
</tr>
<tr>
<td>Minas A4 750 W</td>
<td>2.3 kg</td>
<td>5MPAN.MSMD082P1C</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Type</th>
<th>Torque</th>
<th>Amperage</th>
<th>Weight</th>
<th>Moment of inertia</th>
</tr>
</thead>
<tbody>
<tr>
<td>Minas A4 400 W</td>
<td>1.3 Nm</td>
<td>4 A</td>
<td>1.2 kg</td>
<td>0.26</td>
</tr>
<tr>
<td>Minas A4 750 W</td>
<td>2.4 Nm</td>
<td>17 A</td>
<td>2.3 kg</td>
<td>0.87</td>
</tr>
</tbody>
</table>

Planetary gear box
type PLE 80/90

**Technical data**
- Operating noise: 60 db(A)
- Durability: 30,000 h
- Protection: IP 54

<table>
<thead>
<tr>
<th>Description</th>
<th>Product-No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>PLE 80/90 i40</td>
<td>SPNEU.PLE80/90-040</td>
</tr>
<tr>
<td>PLE 80/90 i100</td>
<td>SPNEU.PLE80/90-100</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Ratio</th>
<th>Reduction stages</th>
<th>Efficiency</th>
<th>Maximum torque Nm</th>
</tr>
</thead>
<tbody>
<tr>
<td>1:40</td>
<td>2</td>
<td>94 %</td>
<td>110</td>
</tr>
<tr>
<td>1:100</td>
<td>3</td>
<td>90 %</td>
<td>120</td>
</tr>
</tbody>
</table>
E-plug connections

Conveyor layout

Cable input

Cable output
Servo drive inside the conveyor speed adjustment with potentiometer

layout

parallel

serial

master conveyor

conveyor

potentiometer

mains

optional

Electrical connection
- each conveyor can be specified as master or slave and can be installed in a parallel or serial layout (up to 10 conveyors)
- mains supply 16 A with circuit breaker type C (1NPE 230 V / 50 Hz / 16 A)
- input wire 230 V (plug with connector housing Harting HAN-3A-M, 4-pin)
- input wire motor speed pre-selection plug M12, 4-pin
- 1 x output wire 230 V for parallel layout (socket Harting HAN-3A-M, 4-pin integrated in base frame)
- 1 x output wire 230 V for serial layout (socket Harting HAN-3A-M, 4-pin integrated in base frame)
- output wire motor speed pre-selection with status for servo drive plug M12, 4-pin
- each conveyor is protected with C4A circuit breaker
- protection IP 40
- potentiometer with socket M12, 4-pin (not included in scope of delivery)
- power supply to conveyor 1 (master) with Harting HAN-3A-M, 4-pin

Analysis output for servo drive integrated in conduit of each conveyor

Sensor cable for monitoring of motor speed at drive shaft integrated in conduit of each conveyor
Servo drive inside the conveyor speed adjustment according external index value

**Electrical connection**
- each conveyor can be specified as master or slave and can be installed in a parallel or serial layout (up to 10 conveyors)
- mains supply 16 A with circuit breaker type C (1NPE 230 V / 50 Hz / 16 A)
- input wire 230 V (plug with connector housing Harting HAN-3A-M, 4-pin)
- input wire motor speed pre-selection plug M12, 4-pin
- 1 × output wire 230 V for parallel layout (socket Harting HAN-3A-M, 4-pin integrated in base frame)
- 1 × output wire 230 V for serial layout (socket Harting HAN-3A-M, 4-pin integrated in base frame)
- output wire motor speed pre-selection with status for servo drive plug M12, 4-pin
- each conveyor is protected with C4A circuit breaker
- protection IP 40
- input socket for external index value M12, 4-pin
- power supply to conveyor 1 (master) with Harting HAN-3A-M, 4-pin

**optional**

**Analysis output for servo drive integrated in conduit of each conveyor**

**Sensor cable for monitoring of motor speed at drive shaft integrated in conduit of each conveyor**
Servo drive with external control cabinet
speed adjustment according external index value

Electrical connection
- mains supply 16 A with circuit breaker type C (1NPE 230 V / 50 Hz / 16 A)
- motor speed parameter: analog index value
- inverter enabling: activation 24 V DC
- error reset: activation 24 V DC
- motor cord: type MFMCA EED-S
- resolver cord: type MFECA EAM-S (in m)
- external motor speed analysis
- counter signal 24 VCD PNP switching (min. 5 Hz) with plug M12×1
- protection IP 40
- motor cord
- external control cabinet

optional

Analysis output for servo motor optional integrated in external control cabinet
at the servo drive

Sensor cable for monitoring of motor speed at drive shaft
People Mover System

People movers with Kanban trolleys
People Mover System

Concept layout "Large Line"

Calculation:

<table>
<thead>
<tr>
<th>Length</th>
<th>Width</th>
<th>Surface area</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 pcs.</td>
<td>48,000</td>
<td>3,200 308 m²</td>
</tr>
<tr>
<td>2 pcs.</td>
<td>24,000</td>
<td>3,200 154 m²</td>
</tr>
<tr>
<td>2 pcs.</td>
<td>66,000</td>
<td>3,200 423 m²</td>
</tr>
<tr>
<td>2 pcs.</td>
<td>36,000</td>
<td>3,200 230 m²</td>
</tr>
<tr>
<td>Total:</td>
<td></td>
<td>1,115 m²</td>
</tr>
</tbody>
</table>

Concept layout "MayTec People Mover"

Calculation:

<table>
<thead>
<tr>
<th>Length</th>
<th>Width</th>
<th>Surface area</th>
</tr>
</thead>
<tbody>
<tr>
<td>110 pcs.</td>
<td>6,000</td>
<td>800 528 m²</td>
</tr>
<tr>
<td>Total:</td>
<td></td>
<td>528 m²</td>
</tr>
</tbody>
</table>
The key ... to success

extremely strong

efficient

functional

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