

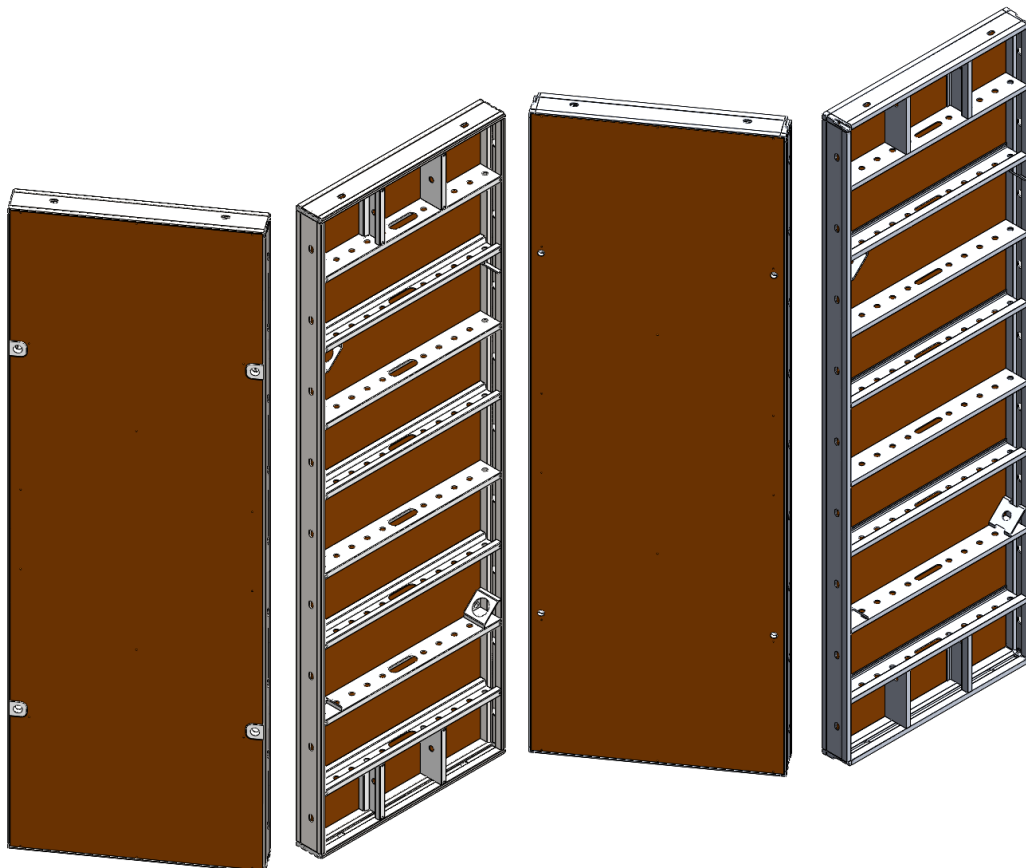
Large-sized frame formwork

# BAUFRAME

Cutting-edge, simple and safe.

Operation and maintenance manual

Status – September 2022



**BAUKRANE**

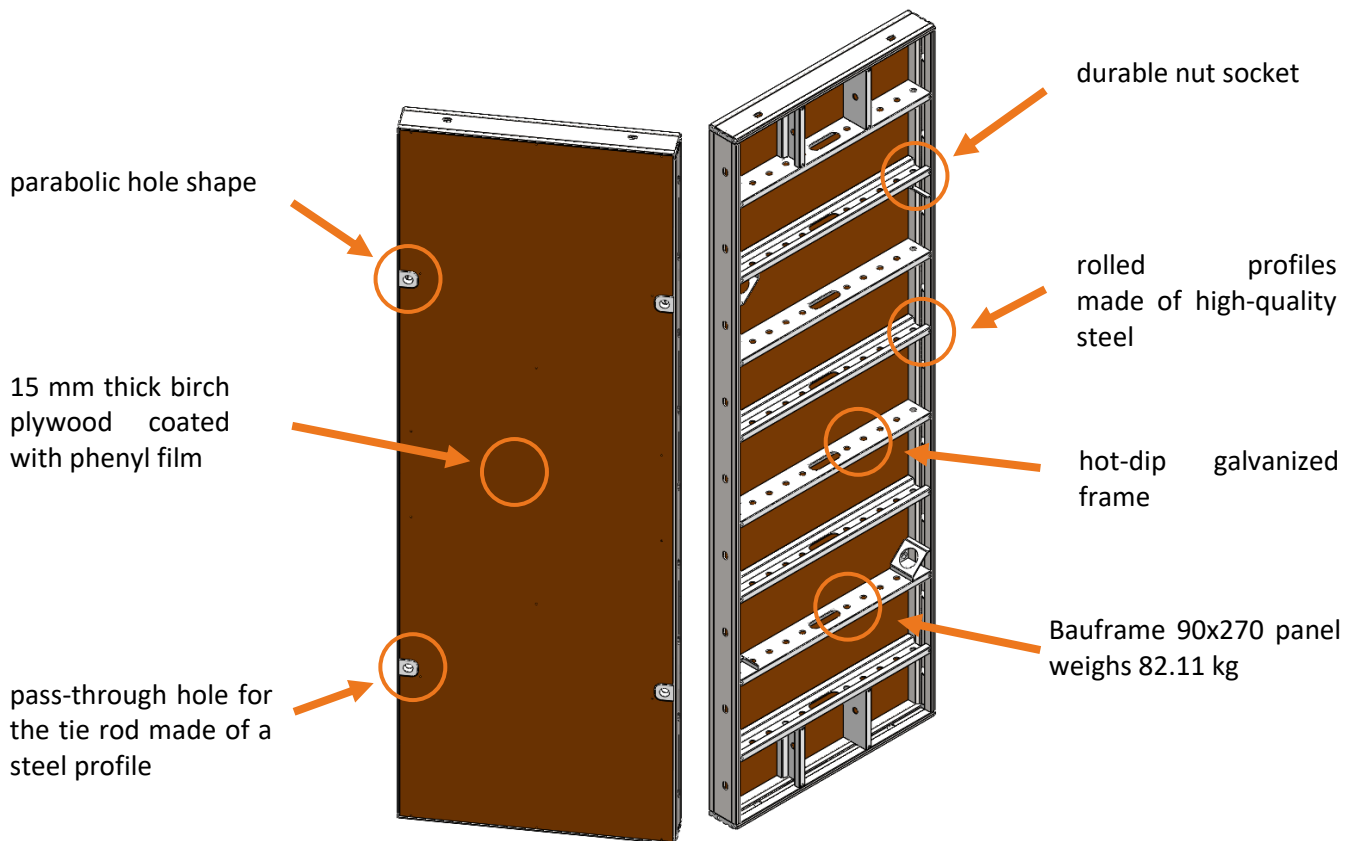


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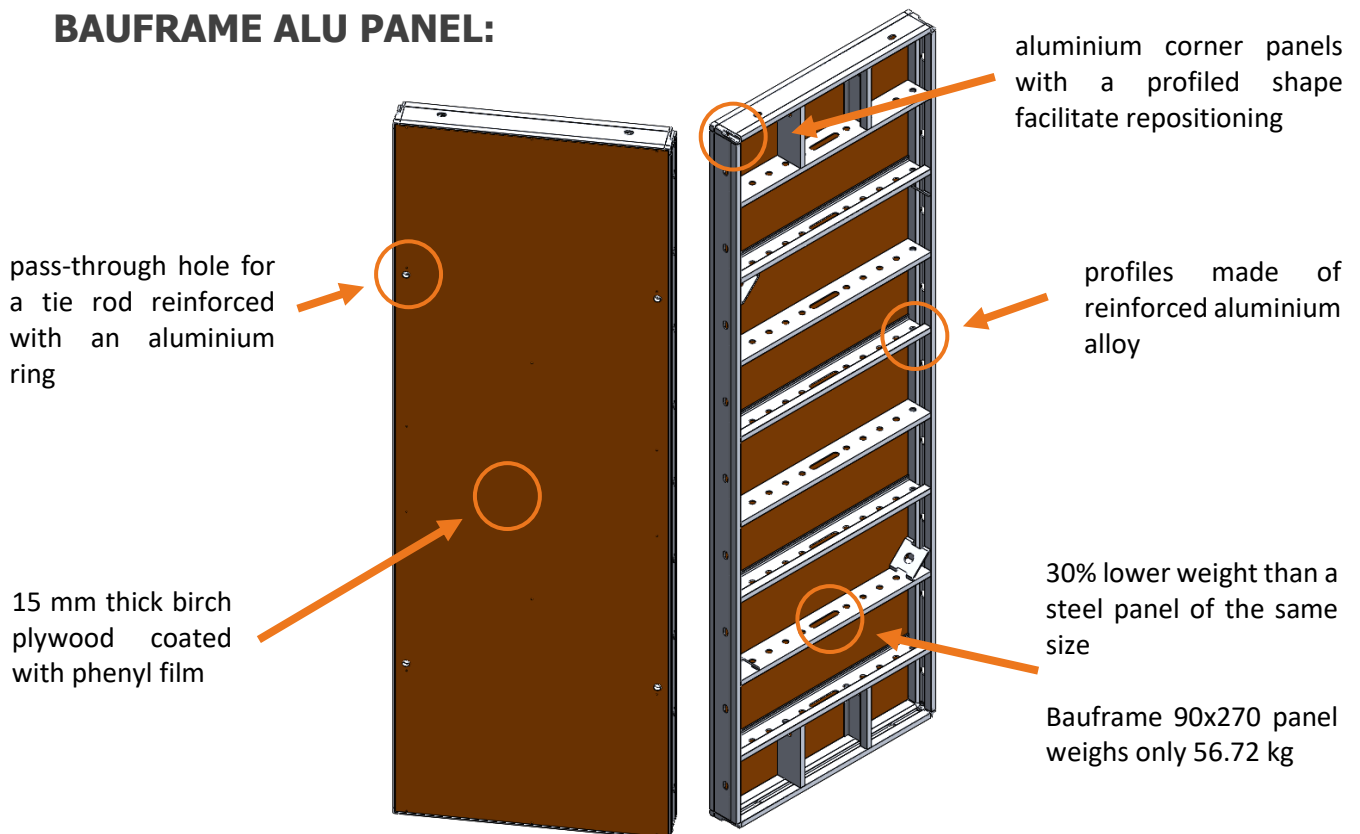
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## BAUFRAME PANEL:



## BAUFRAME ALU PANEL:



## 1. Intended use of formwork

Bauframe and Bauframe Alu are universal frame formwork systems designed for diverse applications in the construction industry, to create a wide range of structures, such as:

- reinforced concrete walls in residential and industrial buildings;
- vertical partitions in building engineering;
- reinforced concrete pillars and cores;
- massive foundations and spot footings.

## 2. Product features

Bauframe is a technically advanced highest-quality product designed and manufactured by Baukrane, using state-of-the-art tools and methods. The frame of each steel panel is made of a closed external profile with height of 121 mm and width of 20mm, and an internal profile with height of 105 mm and a width of 25 mm. Bauframe-Alu panels are made of an external aluminium profile with height of 121 mm and width of 20 mm, and an internal aluminium profile with height of 105 mm and a width of 20 mm.

Internal profiles come with functional openings for accessory fastening. Steel frames are protected against corrosion by hot-dip galvanising. The panel sheathing is made of high-quality 15 mm thick birch plywood. On request, it is possible to install plywood covered with PP (polypropylene) film in the frame.

Each Bauframe steel formwork frame comes with an innovative solution in the form of steel profiles featuring parabolic pass-through openings for tie rods, which protect the sheathing from damage during assembly and disassembly of the formwork. This solution greatly

The system has been engineered to provide all technical, economic and safety conditions for the implementation in all residential and industrial buildings. Thanks to its design, this formwork is easy and convenient to use when installing manually or with a crane on the construction site.

enhances sheathing durability and extends the replacement intervals.

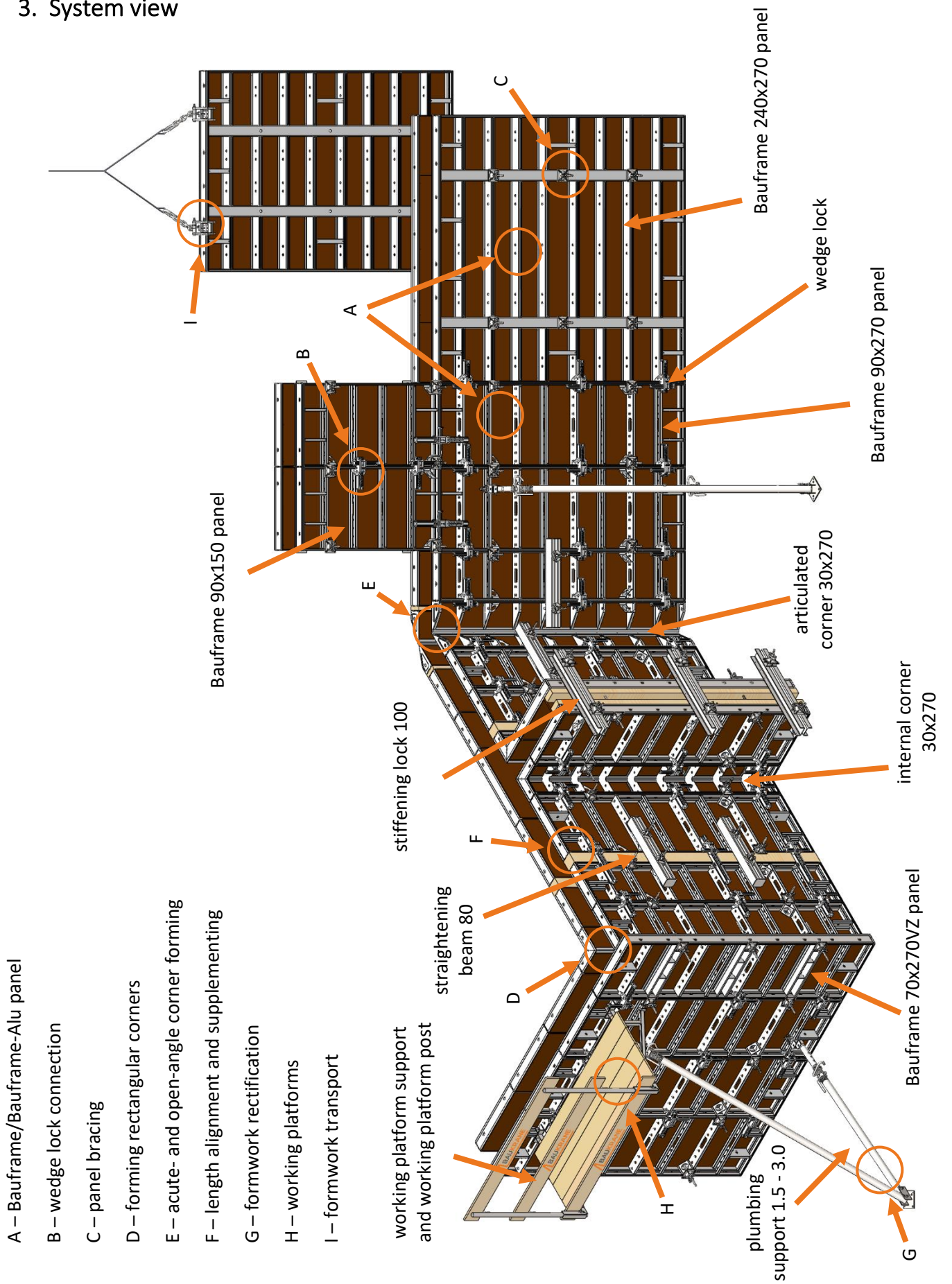
The pass-through holes in aluminium panels are protected with a ring made of durable and lightweight aluminium alloy which effectively protects the plywood against damage, without excessive weight increase of the panel.

Such factors as innovative structural solutions implemented, high fabrication precision, high-quality materials, as well as meticulous quality control of each element during the entire production process guarantee the highest formwork durability plus comfort and safety of its use.

The permissible fresh concrete mix pressure exerted on formwork amounts to 60 kN/m<sup>2</sup>.

Implementation of Bauframe and Bauframe Alu formwork allows you to significantly save time and reduce costs, as compared with traditional wooden formwork.

### 3. System view



A – Bauframe/Bauframe-Alu panel

B – wedge lock connection

C – panel bracing

D – forming rectangular corners

E – acute- and open-angle corner forming

F – length alignment and supplementing

G – formwork rectification

H – working platforms

I – formwork transport

working platform support  
and working platform post

stiffening lock 100

straightening  
beam 80

plumbing  
support 1.5 - 3.0

Bauframe 240x270 panel

wedge lock

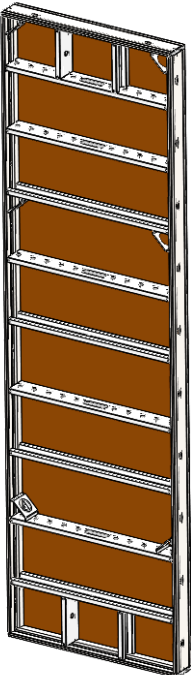
Bauframe 90x270 panel

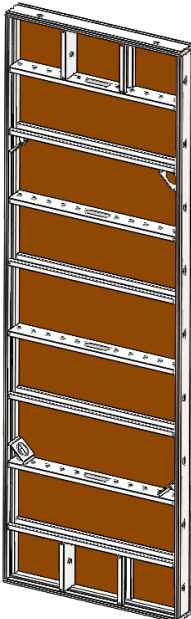
articulated  
corner 30x270


internal corner  
30x270

Bauframe 70x270VZ panel

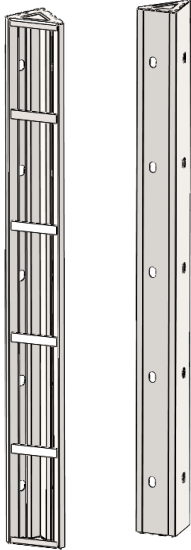
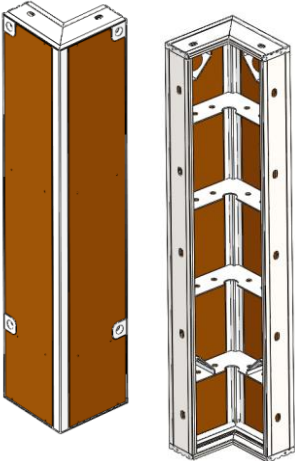
#### 4. Basic and additional accessories

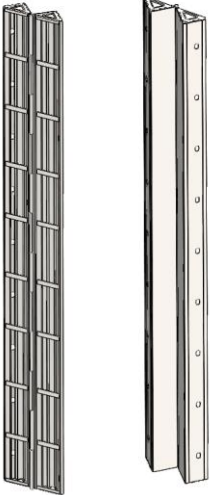

Drawing	Description	Part number	Element weight [kg]
<p><b>Bauframe panels</b></p> <p><b>h = 300 cm panels</b></p> <p><b>Steel panels</b> Width: 25, 30, 45, 50, 55, 60, 65, 70, 75 and 90 cm</p> <p><b>Aluminium panels</b> Width: 25, 30, 35, 40, 45, 50, 55, 60, 65, 70, 75, 80, 85 and 90 cm</p> 	<p>Bauframe and Bauframe Alu panels constitute basic components of the system. They can be used to build a formwork intended for all kinds of construction works. The panels can operate horizontally and vertically.</p> <p><b>BAUFRAME 240x300 panel</b></p> <p><b>BAUFRAME 180x300 panel</b></p> <p><b>BAUFRAME 120x300 panel</b></p> <p><b>BAUFRAME 90x300 VZ panel</b></p> <p><b>BAUFRAME 90x300 panel</b></p> <p><b>BAUFRAME 75x300 panel</b></p> <p><b>BAUFRAME 70x300 VZ panel</b></p> <p><b>BAUFRAME 65x300 panel</b></p> <p><b>BAUFRAME 60x300 panel</b></p> <p><b>BAUFRAME 55x300 panel</b></p> <p><b>BAUFRAME 50x300 panel</b></p> <p><b>BAUFRAME 45x300 panel</b></p> <p><b>BAUFRAME 30x300 panel</b></p> <p><b>BAUFRAME 25x300 panel</b></p> <p><b>BAUFRAME ALU 90x300 panel</b></p> <p><b>BAUFRAME ALU 85x300 panel</b></p> <p><b>BAUFRAME ALU 80x300 panel</b></p> <p><b>BAUFRAME ALU 75x300 panel</b></p> <p><b>BAUFRAME ALU 70x300 VZ panel</b></p> <p><b>BAUFRAME ALU 70x300 panel</b></p> <p><b>BAUFRAME ALU 65x300 panel</b></p> <p><b>BAUFRAME ALU 60x300 panel</b></p> <p><b>BAUFRAME ALU 55x300 panel</b></p> <p><b>BAUFRAME ALU 50x300 panel</b></p> <p><b>BAUFRAME ALU 45x300 panel</b></p> <p><b>BAUFRAME ALU 40x300 panel</b></p> <p><b>BAUFRAME ALU 35x300 panel</b></p> <p><b>BAUFRAME ALU 30x300 panel</b></p> <p><b>BAUFRAME ALU 25x300 panel</b></p>	<p>7241240300</p> <p>7241180300</p> <p>7241120300</p> <p>7241190300</p> <p>7241090300</p> <p>7241075300</p> <p>7241070300</p> <p>7241065300</p> <p>7241060300</p> <p>7241055300</p> <p>7241050300</p> <p>7241045300</p> <p>7241030300</p> <p>7241025300</p> <p>7242090300</p> <p>7242085300</p> <p>7242080300</p> <p>7242075300</p> <p>7242170300</p> <p>7242070300</p> <p>7242065300</p> <p>7242060300</p> <p>7242055300</p> <p>7242050300</p> <p>7242045300</p> <p>7242040300</p> <p>7242035300</p> <p>7242030300</p> <p>7242025300</p>	<p>344.85</p> <p>275.23</p> <p>175.69</p> <p>140.48</p> <p>90.45</p> <p>80.10</p> <p>113.40</p> <p>73.42</p> <p>70.00</p> <p>66.74</p> <p>63.32</p> <p>57.45</p> <p>49.32</p> <p>45.90</p> <p>62.69</p> <p>59.36</p> <p>56.80</p> <p>54.24</p> <p>75.38</p> <p>50.92</p> <p>48.36</p> <p>45.80</p> <p>43.31</p> <p>40.75</p> <p>38.19</p> <p>35.70</p> <p>33.15</p> <p>30.81</p> <p>28.63</p>

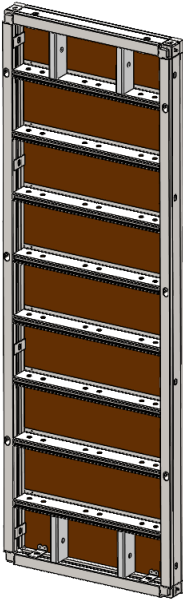
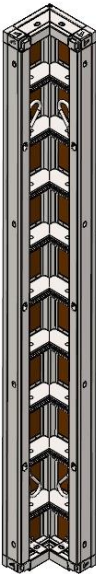
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<p><b>h = 270 cm panels</b></p> <p><b>Steel panels</b> Width: 25, 30, 45, 50, 55, 60, 65, 70, 75, 90, 120, 180 and 240cm</p> <p><b>Aluminium panels</b> Width: 25, 30, 35, 40, 45, 50, 55, 60, 65, 70, 75, 80, 85 and 90 cm</p> 	<p><b>BAUFRAME 240x270 panel</b></p> <p><b>BAUFRAME 180x270 panel</b></p> <p><b>BAUFRAME 120x270 panel</b></p> <p><b>BAUFRAME 90x270 VZ panel</b></p> <p><b>BAUFRAME 90x270 panel</b></p> <p><b>BAUFRAME 75x270 panel</b></p> <p><b>BAUFRAME 70x270 VZ panel</b></p> <p><b>BAUFRAME 65x270 panel</b></p> <p><b>BAUFRAME 60x270 panel</b></p> <p><b>BAUFRAME 55x270 panel</b></p> <p><b>BAUFRAME 50x270 panel</b></p> <p><b>BAUFRAME 45x270 panel</b></p> <p><b>BAUFRAME 30x270 panel</b></p> <p><b>BAUFRAME 25x270 panel</b></p> <p><b>BAUFRAME ALU 90x270 panel</b></p> <p><b>BAUFRAME ALU 85x270 panel</b></p> <p><b>BAUFRAME ALU 80x270 panel</b></p> <p><b>BAUFRAME ALU 75x270 panel</b></p> <p><b>BAUFRAME ALU 70x270 VZ panel</b></p> <p><b>BAUFRAME ALU 70x270 panel</b></p> <p><b>BAUFRAME ALU 65x270 panel</b></p> <p><b>BAUFRAME ALU 60x270 panel</b></p> <p><b>BAUFRAME ALU 55x270 panel</b></p> <p><b>BAUFRAME ALU 50x270 panel</b></p> <p><b>BAUFRAME ALU 45x270 panel</b></p> <p><b>BAUFRAME ALU 40x270 panel</b></p> <p><b>BAUFRAME ALU 35x270 panel</b></p> <p><b>BAUFRAME ALU 30x270 panel</b></p> <p><b>BAUFRAME ALU 25x270 panel</b></p>	<p>7241240270</p> <p>7241180270</p> <p>7241120270</p> <p>7241190270</p> <p>7241090270</p> <p>7241075270</p> <p>7241070270</p> <p>7241065270</p> <p>7241060270</p> <p>7241055270</p> <p>7241050270</p> <p>7241045270</p> <p>7241030270</p> <p>7241025270</p> <p>7242090270</p> <p>7242085270</p> <p>7242080270</p> <p>7242075270</p> <p>7221170270</p> <p>7242070270</p> <p>7242065270</p> <p>7242060270</p> <p>7242055270</p> <p>7242050270</p> <p>7242045270</p> <p>7242040270</p> <p>7242035270</p> <p>7242030270</p> <p>7242025270</p>	<p>302.58</p> <p>248.52</p> <p>157.05</p> <p>124.34</p> <p>82.11</p> <p>71.59</p> <p>100.05</p> <p>65.52</p> <p>62.41</p> <p>59.43</p> <p>56.34</p> <p>51.88</p> <p>43.47</p> <p>40.38</p> <p>56.72</p> <p>53.62</p> <p>51.30</p> <p>49.00</p> <p>67.02</p> <p>45.89</p> <p>43.57</p> <p>41.25</p> <p>39.00</p> <p>36.67</p> <p>34.35</p> <p>32.09</p> <p>29.79</p> <p>27.66</p> <p>26.70</p>

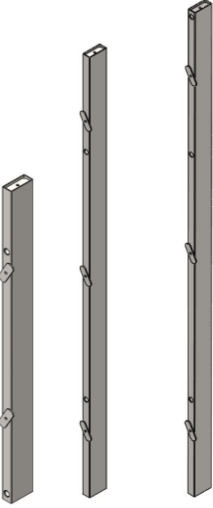
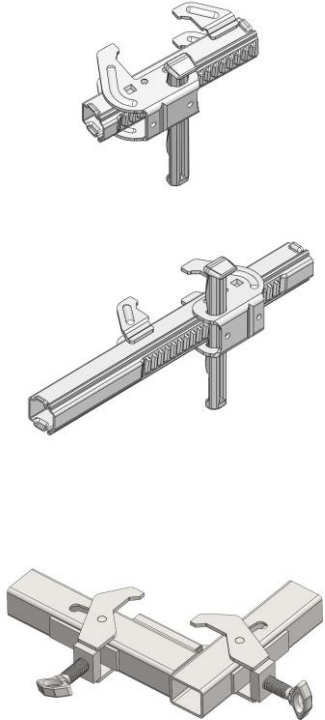
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<p><b>h = 150cm panels</b></p> <p><b>Steel panels</b> Width: 25, 30, 45, 50, 55, 60, 65, 70, 75 and 90 cm</p> <p><b>Aluminium panels</b> Width: 25, 30, 45, 50, 55, 60, 65, 70, 75 and 90 cm</p> 	<p><b>BAUFRAME 90x150 VZ panel</b> 7241190150 71.96</p> <p><b>BAUFRAME 90x150 panel</b> 7241090150 50.67</p> <p><b>BAUFRAME 75x150 panel</b> 7241075150 43.82</p> <p><b>BAUFRAME 70x150 VZ panel</b> 7241070150 57.72</p> <p><b>BAUFRAME 65x150 panel</b> 7241065150 40.18</p> <p><b>BAUFRAME 60x150 panel</b> 7241060150 38.34</p> <p><b>BAUFRAME 55x150 panel</b> 7241055150 36.54</p> <p><b>BAUFRAME 50x150 panel</b> 7241050150 34.69</p> <p><b>BAUFRAME 45x150 panel</b> 7241045150 31.50</p> <p><b>BAUFRAME 30x150 panel</b> 7241030150 26.40</p> <p><b>BAUFRAME 25x150 panel</b> 7241025150 24.55</p> <p><b>BAUFRAME ALU 90x150 panel</b> 7242090150 35.28</p> <p><b>BAUFRAME ALU 75x150 panel</b> 7242075150 31.17</p> <p><b>BAUFRAME ALU 70x150 VZ panel</b> 7242170150 39.09</p> <p><b>BAUFRAME ALU 65x150 panel</b> 7242065150 27.57</p> <p><b>BAUFRAME ALU 60x150 panel</b> 7242060150 26.19</p> <p><b>BAUFRAME ALU 55x150 panel</b> 7242055150 24.81</p> <p><b>BAUFRAME ALU 50x150 panel</b> 7242050150 23.44</p> <p><b>BAUFRAME ALU 45x150 panel</b> 7242045150 21.22</p> <p><b>BAUFRAME ALU 30x150 panel</b> 7242030150 17.08</p> <p><b>BAUFRAME ALU 25x150 panel</b> 7242025150 15.71</p>		
<p><b>h = 90 cm panels</b></p> <p><b>Steel panels</b> Width: 25, 30, 45, 50, 55, 60, 65, 70, 75 and 90 cm</p> 	<p><b>BAUFRAME 90x90 VZ panel</b> 7241190090 51.68</p> <p><b>BAUFRAME 90x90 panel</b> 7241009090 35.05</p> <p><b>BAUFRAME 75x90 panel</b> 7241007590 29.97</p> <p><b>BAUFRAME 70x90 SVZ panel</b> 7241070090 40.46</p> <p><b>BAUFRAME 65x90 panel</b> 7241006590 27.49</p> <p><b>BAUFRAME 60x90 panel</b> 7241006090 26.27</p> <p><b>BAUFRAME 55x90 panel</b> 7241005590 25.07</p> <p><b>BAUFRAME 50x90 panel</b> 7241005090 23.85</p> <p><b>BAUFRAME 45x90 panel</b> 7241004590 21.13</p> <p><b>BAUFRAME 30x90 panel</b> 7241003090 17.71</p> <p><b>BAUFRAME 25x90 panel</b> 7241002590 16.48</p> <p>90 cm high panels are available only in the steel version. Due to their weight and dimensions, they are particularly useful in the foundation formwork and top sections.</p>		

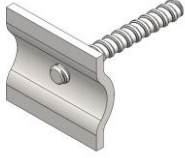

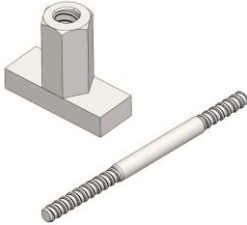
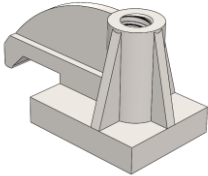


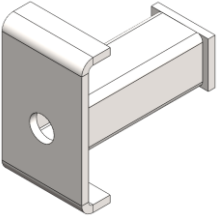

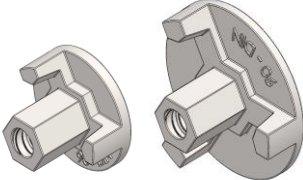
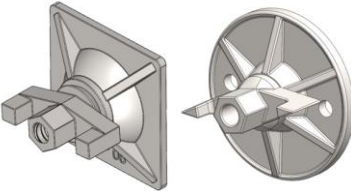
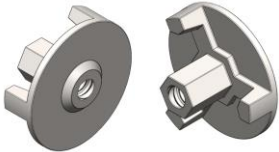
Drawing	Description	Part number	Element weight [kg]
<p><b>Bauframe corners</b></p> <p><b>External corners</b> Height: 90, 150, 270 and 300 cm</p>  <p><b>Internal corners</b> Height: 90, 150, 270 and 300cm</p> 	<p><b>Steel corners:</b></p> <p><b>External corner BAUFRAME, 0x300</b>  <b>External corner BAUFRAME, 0x270</b>  <b>External corner BAUFRAME, 0x150</b>  <b>External corner BAUFRAME, 0x90</b></p> <p>Placed on the outside of rectangular corners and when forming pillar formwork.</p> <p>They are available only in the steel version.</p> <p><b>Steel corners:</b></p> <p><b>Internal corner BAUFRAME, 30x30x300</b>  <b>Internal corner BAUFRAME, 30x30x270</b>  <b>Internal corner BAUFRAME, 30x30x150</b>  <b>Internal corner BAUFRAME, 30x30x90</b></p> <p><b>Aluminium corners:</b></p> <p><b>Internal corner BAUFRAME ALU, 30x30x300</b>  <b>Internal corner BAUFRAME ALU, 30x30x270</b>  <b>Internal corner BAUFRAME ALU, 30x30x150</b></p> <p>They are used to form corners type L, T and X, at a right angle. They contain plywood and pass-through holes for tie rods.</p>	<p>7222B00300 7222B00270 7241400150 7241400090</p> <p>81.20 72.20 42.46 27.58</p> <p>7242230300 7243030270 7242230150</p>	<p>31.10 28.02 15.68 9.52</p>

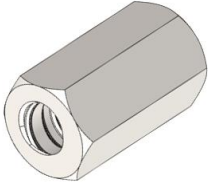
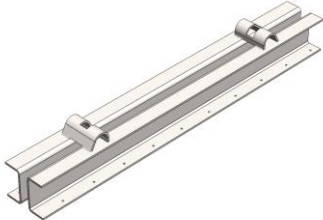
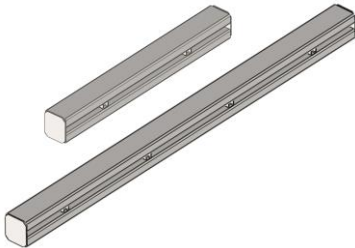
Drawing	Description	Part number	Element weight [kg]
<p><b>Articulated corners</b></p> <p><b>Articulated corners 15x15:</b> Height: 90, 150, 270 and 300cm</p> 	<p>Articulated corners are available only in the steel version.</p> <p><b>Steel corners:</b></p> <p><b>Articulated corner BAUFROME, 15x15x300</b></p> <p><b>Articulated corner BAUFROME, 15x15x270</b></p> <p><b>Articulated corner BAUFROME, 15x15x150</b></p> <p><b>Articulated corner BAUFROME, 15x15x90</b></p> <p>Metal elements used to form acute- and open-angle, internal and external corners. The corner comes with a 15 cm wide arm.</p>	<p>7241515300</p> <p>7241515270</p> <p>7241515150</p> <p>7241515090</p>	<p>74.80</p> <p>67.36</p> <p>37.62</p> <p>22.80</p>
<p><b>Articulated corners 30x30:</b> Height: 90, 150, 270 and 300cm</p> 	<p><b>Steel corners:</b></p> <p><b>Articulated corner BAUFROME, 30x30x300</b></p> <p><b>Articulated corner BAUFROME, 30x30x270</b></p> <p><b>Articulated corner BAUFROME, 30x30x150</b></p> <p><b>Articulated corner BAUFROME, 30x30x90</b></p> <p>Corners containing plywood and tie rod holes. They are used to form acute- and open-angle, internal and external corners. These corners come with 30 cm wide arms.</p>	<p>7241530300</p> <p>7241530270</p> <p>7241530150</p> <p>7241530090</p>	<p>92.42</p> <p>82.35</p> <p>47.83</p> <p>30.58</p>

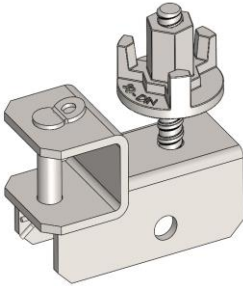
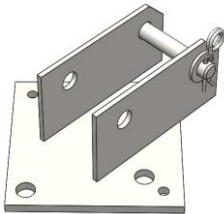

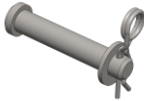
Drawing	Description	Part number	Element weight [kg]
<p data-bbox="217 309 568 338"><b>Bauschal panels and corners</b></p>  	<p data-bbox="600 378 1082 589">Bauschal panels are elements that complement Bauframe formwork systems. The design of the panel frames makes them fully compatible with any Bauframe system component, except for the Bauframe transport fixture.</p> <p data-bbox="600 701 919 768"><b>BAUSCHAL 90x300 panel</b> <b>BAUSCHAL 240x300 panel</b></p> <p data-bbox="600 844 1082 1016">Due a different arrangement of pass-through holes for tie rods, it is not possible to position Bauschal panels in the formwork opposite Bauframe panels.</p> <p data-bbox="600 1200 1070 1229"><b>Internal corner BAUSCHAL, 30x30x300</b></p> <p data-bbox="600 1308 1082 1480">They are used to form corners type L, T and X, at a right angle. They contain plywood and pass-through holes for tie rods. Equipped with crane lifting lugs.</p>	<p data-bbox="1098 734 1251 801">7245090300 7245240300</p> <p data-bbox="1098 1200 1251 1229">7246030300</p>	<p data-bbox="1291 734 1382 801">146.60 397.00</p> <p data-bbox="1291 1200 1382 1229">114.20</p>

Drawing	Description	Part number	Element weight [kg]
<p><b>Supplementary inserts</b></p> 	<p><b>Supplementary insert, 5x300</b>  <b>Supplementary insert, 5x270</b>  <b>Supplementary insert, 5x150</b></p> <p>Steel balancing elements used to adjust the wall dimension in the 5 cm module. Most commonly used within corners. In order to achieve a multiple of 5 cm, double and triple insert connections are allowed.</p>	<p>7270005300  7270005270  7270005150</p>	<p>21.45  18.92  11.66</p>
<p><b>Bracing elements</b></p> 	<p><b>Baukrane wedge lock</b>  <b>Baukrane UNI wedge lock</b></p> <p>A basic accessory for formwork panel joining. When the mechanism is locked, the lock simultaneously clamps and sets the formwork panels within one plane, providing a tight and stretch-resistant connection. Horizontal and vertical mounting options are available. The locks make it possible to connect panels with wooden or steel supplementary inserts.</p> <p><b>Corner lock</b></p> <p>A lock dedicated to Bauframe systems, used to connect panels in corners.</p>	<p>7271000002  7271000003</p> <p>7271000090</p>	<p>4.20  5.50</p> <p>6.20</p>


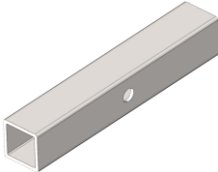


Drawing	Description	Part number	Element weight [kg]
<p>Length: 12 cm, 20 cm</p> 	<p><b>Centring tie rod, 120</b></p> <p>A method of connecting panels through holes in the external profile, offering an alternative to locks. In combination with the centring nut, it aligns the panels and creates a tear-resistant connection, especially in hard-to-reach places where it is not possible to fully secure a lock.</p>	7270000120	0.79
<p>Length: 30 cm, 50 cm</p> 	<p><b>Bolt tensioner, 30</b> <b>Bolt tensioner, 50</b></p> <p>Used to fix straightening beams.</p>	7270000030 7270000050	0.71 1.02
	<p><b>VZ pin</b> <b>VZ nut</b></p> <p>Used to connect VZ BAUFRAME and BAUFRAME ALU universal panels for pillar formwork construction purposes. Must be used with articulated nuts 120.</p>	7270000002 727100R001	0.53 0.46
	<p><b>VZ corner catch</b></p> <p>Used to connect BAUFRAME VZ and BAUFRAME-ALU VZ universal panels with standard panels for pillar formwork construction purposes. This catch also facilitates using VZ panels when forming rectangular corners. Must be used with VZ pins and articulated nuts 120.</p>	7271100001	0.93

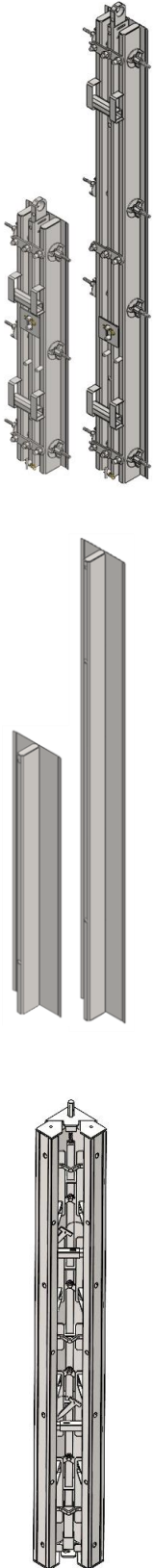
Drawing	Description	Part number	Element weight [kg]
 <p>Length: 75, 100, 150, 200, 250 and 300 cm</p>	<p><b>Edge catch</b></p> <p>Used to clamp panels without using pass-through holes for tie rods tendons or when creating face plates. For use with Bauframe and Bauframe-Alu panels.</p>	7270000007	1.46
	<p><b>Tie rod, DW-15</b></p> <p>The main formwork element transferring tensile forces caused by concrete mix pressure. Used to connect oppositely positioned panels. Must be used with disc nuts (100) and articulated nuts (113x113 and 120). Transfers tensile forces with a maximum value of 90 kN.</p>	7270015075 7270015100 7270015150 7270115200 7270015250 7270015300	1.50 kg/running metre
	<p><b>Nut, Ø70</b> <b>Nut, Ø100</b></p> <p>These nuts are used with centring tie rods, VZ pins, tie rod catches and DW-15 tie rods. They are used only to make connections with accessories. They must not be used to connect oppositely positioned panels. They can be handled using a steel rod, hammer or hexagon wrench.</p>	7000000070 7000000100	0.46 0.64
	<p><b>Articulated nut, 113x113, square</b> <b>Articulated nut, Ø120, forged</b></p> <p>Used together with tie rods to connect oppositely positioned formwork panels. Compatible with DW-15 tie rods.</p>	7000120120 7000120000	1.20 2.00
	<p><b>Centring nut</b></p> <p>Used together with a centring tie rod or stiffening lock.</p>	7460000058	0.67


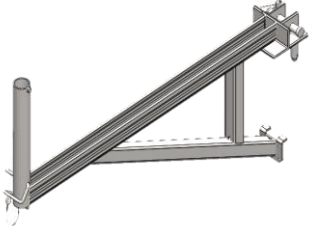


Drawing	Description	Part number	Element weight [kg]
 <p><b>Aligning and straightening elements</b></p>  <p>Length: 80, 120, 150, 200, 260 cm</p> 	<p><b>Hex nut, 50</b></p> <p>Used to connect accessories if disc nuts cannot be used. In special cases, it can be used to connect tie rods.</p> <p><b>Stiffening lock, 100</b></p> <p>Used to stiffen supplementary inserts between panels as well as to create top sections and formwork face closures. It comes with holes in sockets. It is fastened with lock tensioners or centring tie rods and centring nuts.</p> <p><b>Straightening beam, 80</b>  <b>Straightening beam, 120</b>  <b>Straightening beam, 150</b>  <b>Straightening beam, 200</b>  <b>Straightening beam, 260</b></p> <p>Used to correctly accommodate forces from tie rods and straighten/stiffen the formwork plane. Fastened to formwork with lock tensioners and pass-through nuts.</p>	<p>7270010650</p> <p>7270200100</p> <p>7270100080 7270100120 7270100150 7270100200 7270100260</p>	<p>0.23</p> <p>15.00</p> <p>10.60 15.62 20.64 25.66 30.67</p>

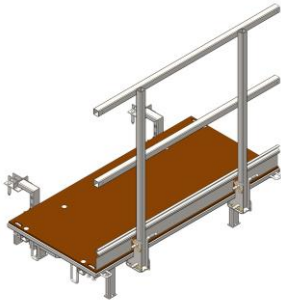
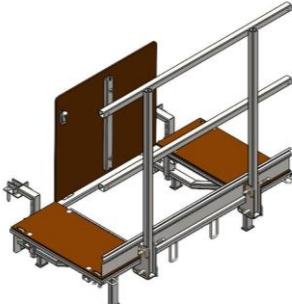
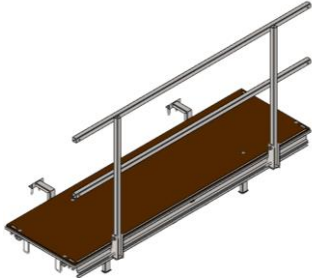
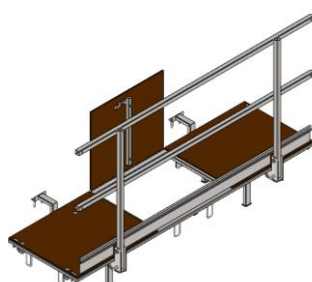
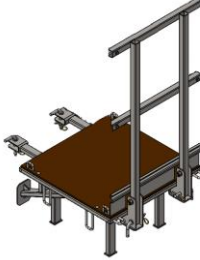
Drawing	Description	Part number	Element weight [kg]
<p data-bbox="217 344 448 376"><b>Plumbing supports</b></p>    	<p data-bbox="609 421 900 452"><b>Plumbing support head</b></p> <p data-bbox="609 495 1102 663">Used to correctly attach the plumbing support to the formwork panel frame. Facilitates making connections to vertical or horizontal frame elements. Integrated with a pin and nut.</p>	7271000300	2.08
	<p data-bbox="609 779 890 810"><b>Plumbing support foot</b></p> <p data-bbox="609 853 1102 954">Used to correctly attach one or two plumbing supports to the ground. Equipped with one pin.</p>	7272000000	2.59
	<p data-bbox="609 1137 927 1169"><b>Plumbing support, 0.9-1.3</b></p>	7271080130	8.22
	<p data-bbox="609 1171 927 1202"><b>Plumbing support, 1.6-2.4</b></p>	7270150230	12.83
	<p data-bbox="609 1205 927 1236"><b>Plumbing support, 2.8-4.7</b></p> <p data-bbox="609 1279 1102 1514">Used to fully rectify the formwork. Symbols in the name indicate the support length adjustment range. Equipped with a nut and locking pin. Connected to the head and foot using pins. Supports do not transfer loads caused fresh concrete mix pressure.</p>	7271280470	21.18
<p data-bbox="609 1637 788 1668"><b>Pin, dia. 16-96</b></p> <p data-bbox="609 1711 1102 1767">Connects plumbing supports with heads and feet.</p>	7270000005	0.18	

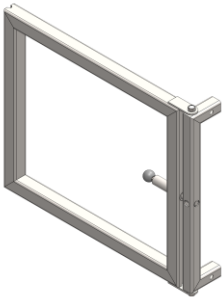
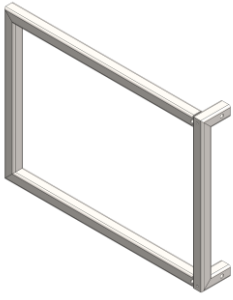

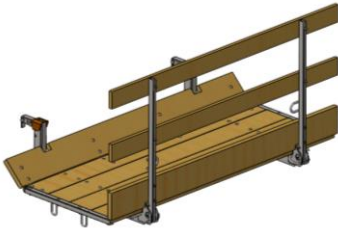
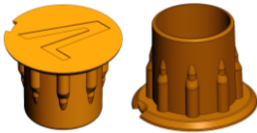


Drawing	Description	Part number	Element weight [kg]
<p><b>Radial strips</b></p>    	<p><b>Radial strip, 25x300</b>  <b>Radial strip, 25x270</b>  <b>Radial strip, 25x150</b></p> <p><b>Radial strip, 20x300</b>  <b>Radial strip, 20x270</b>  <b>Radial strip, 20x150</b></p> <p><b>Radial strip, 15x300</b>  <b>Radial strip, 15x270</b>  <b>Radial strip, 15x150</b></p> <p>Facilitate constructing radial walls when placed between standard panels.</p>	<p>7250025300  7250025270  7250025150</p> <p>7250020300  7250020270  7250020150</p> <p>7250015300  7250015270  7250015150</p>	<p>40.97  36.84  24.19</p> <p>38.17  34.74  21.02</p> <p>35.83  32.63  19.85</p>
	<p><b>Tie rod beam</b></p> <p>It complements a radial insert, lift shaft insert and supplementing metal sheet. Facilitates transfer of tensile forces carried by the tie rods and nuts.</p>	<p>7270000008</p>	<p>2.64</p>
	<p><b>Bauframe transport fixture</b></p> <p>Used to safely transport individual Bauframe system panels or their sets. The fixture load capacity is 12 kN.</p>	<p>7271000000</p>	<p>8.06</p>
	<p><b>Baukrane transport fixture</b></p> <p>Used to safely transport individual Bauframe and Bauschal system panels or their sets. The fixture load capacity is 12 kN.</p>	<p>72700000BB</p>	<p>8.50</p>

Drawing	Description	Part number	Element weight [kg]
<p><b>Lift shaft</b></p> 	<p><b>Lift shaft insert, 300</b>  <b>Lift shaft insert, 270</b>  <b>Lift shaft insert, 150</b></p> <p>When placed between standard panels, they facilitate constructing internal formwork for a rectangular lift shaft.</p> <p><b>Supplementing metal sheet, 300</b>  <b>Supplementing metal sheet, 270</b>  <b>Supplementing metal sheet, 150</b></p> <p>When mounted opposite to a lift shaft insert, it facilitates forming the outer part of the lift shaft formwork. Element width - 36 cm.</p> <p><b>Lift shaft corner, 30x300</b></p> <p>Used to create internal formwork of lift shafts and process shafts.</p>	<p>7270300300  7270300270  7270300150</p> <p>7270200300  7270200270  7270200150</p> <p>727130300</p>	<p>122.65  113.14  67.80</p> <p>48.63  43.77  25.09</p> <p>184.00</p>

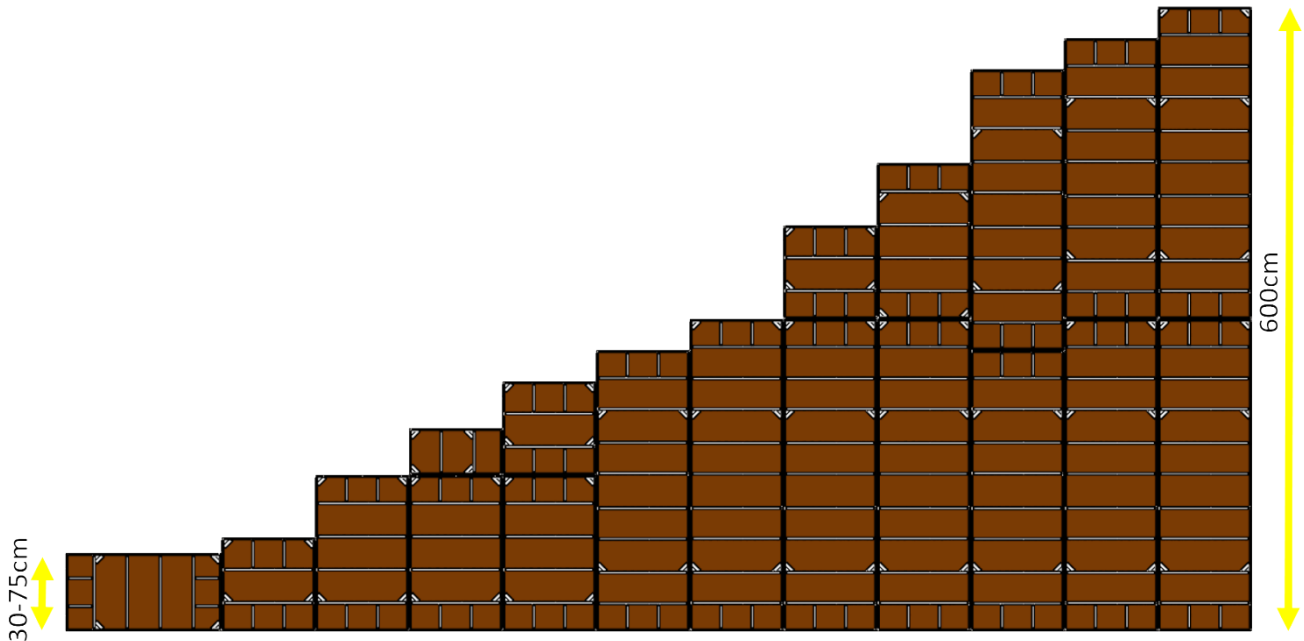
Drawing	Description	Part number	Element weight [kg]
<p data-bbox="217 344 411 376"><b>Mesh container</b></p> 	<p data-bbox="606 421 801 452"><b>Mesh container</b></p> <p data-bbox="606 492 1101 734">Used for safe storage and transport of small-sized accessories. Suitable for vertical transport. The permissible weight of the load with the container is 1200 kg. Possibility of stacking on the construction site or during transport (up to 2 pieces).</p>	7270000900	76.00
<p data-bbox="217 887 437 918"><b>Working platform</b></p>   	<p data-bbox="606 887 932 918"><b>Working platform support</b></p> <p data-bbox="606 958 1101 1128">Used to create a safe, temporary work platform. Mounted to vertical or horizontal frame profiles. Equipped with a safety pin used for mounting to a vertical profile.</p> <p data-bbox="606 1312 852 1344"><b>Work platform post</b></p> <p data-bbox="606 1384 1101 1487">When placed in a dedicated bracket seat, it facilitates creating a safety barrier around a working platform.</p> <p data-bbox="606 1778 896 1809"><b>Safety toeboard fixture</b></p> <p data-bbox="606 1850 1101 1953">Mounted from the bottom of the working platform post to attach a safety toeboard.</p>	7400000008	10.50
		7410000005	3.98
		7400000020	0.45

Drawing	Description	Part number	Element weight [kg]
	<p><b>Working landing, 70x145</b></p>	7260070145	67.80
	<p><b>Working landing, 70x145, with hatch</b></p> <p>A working landing with an integrated platform and safety barrier to be used individually or in combination with sets. Facilitates creating a safe working platform installed in the straight wall formwork (width 70 cm and length 145 cm). The landing with a hatch makes it possible to create a traffic platform.</p>	7260170145	69.90
	<p><b>Working platform, 70x238</b></p>	1400070238	98.80
	<p><b>Working landing, 70x238, with hatch</b></p> <p>A working landing with an integrated platform and safety barrier to be used individually or in combination with sets. Facilitates creating a safe working platform installed in the straight wall formwork (width 70 cm and length 238cm). Dedicated particularly to handle large-sized panels. The landing with a hatch makes it possible to create a traffic platform.</p>	1400070239	100.80
	<p><b>Working platform, 70x70</b></p> <p>Working landing with an integrated landing and barrier. Facilitates creating a safe working platform installed in pillar formwork or as a supplement to a landing installed in the straight wall formwork.</p>	7260070070	43.20

Drawing	Description	Part number	Element weight [kg]
	<p><b>Mobile top landing barrier</b></p> <p>Used to close a flight on working landing top sides. It can be used in an open or closed position, which facilitates entry to the landing. Fastened to landings with screws.</p>	7260000002	6.72
	<p><b>Fixed top landing barrier</b></p> <p>Used to close a flight on working landing top sides. It can only be used in a closed position. Fastened to the landing with screws.</p>	7260000001	5.74
	<p><b>Telescopic ladder, 2.2-3.9</b></p> <p>An aluminium telescopic ladder compatible with a working landing with or without a hatch. Its adjustment range is from 225 cm to 390 cm.</p>	7260000003	9.50
	<p><b>Concreting platform, U 1.25/2.40</b></p> <p>A universal prefabricated concreting platform installed on the formwork edge. Equipped with catches and a safety pawl. Facilitates creating a safe working platform installed in the straight wall formwork (width 110cm and length 238cm).</p>	1491000029	127.5
<p><b>Panel cap</b></p> 	<p><b>Bauframe cap</b></p> <p>Protects unused pass-through against the escape of concrete mix from formwork. Its ribbed structure facilitates removal from the formwork panel.</p>	7000000013	0.01

## 5. Work planning and installation preparation

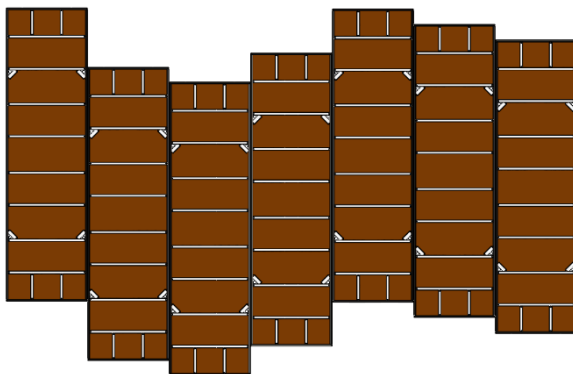
### 5.1. Basic information.



Bauframe and Bauframe Alu system panels can be installed both in horizontal and vertical positions. Thanks to a wide range of panel dimensions, the formwork height can be adjusted to any object height.

When using top sections, the formwork height is virtually unlimited. However, attention should be paid to the concreting speed and concrete mix consistency, as the permissible fresh concrete mixture pressure exerted on the formwork structure is  $60 \text{ kN/m}^2$ .

**NOTE! The Bauframe and Bauframe-Alu formwork resistance to fresh concrete mixture pressure is  $60 \text{ kN/m}^2$ !**

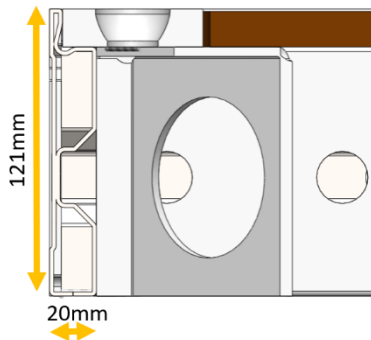
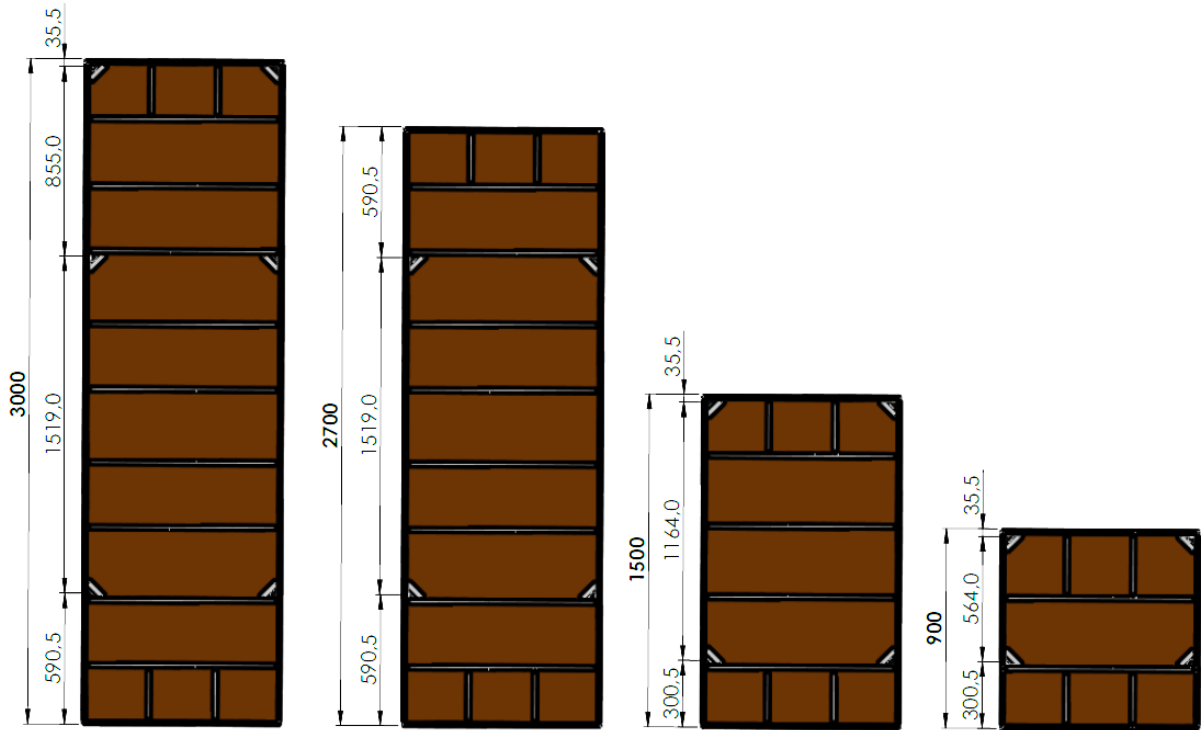


The frame side profile and wedge lock design makes it possible to connect the panels in a stepless manner, with offset at height, without using of additional elements. Thus the formwork can be adjusted to any uneven substrate.

**NOTE! After supplementing the formwork with Bauschal panels, its resistance to fresh concrete mixture pressure is still  $60 \text{ kN/m}^2$ !**

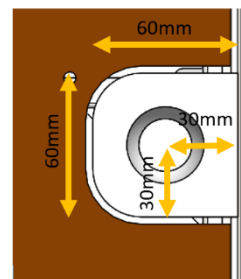
## 5.2. Bauframe panel

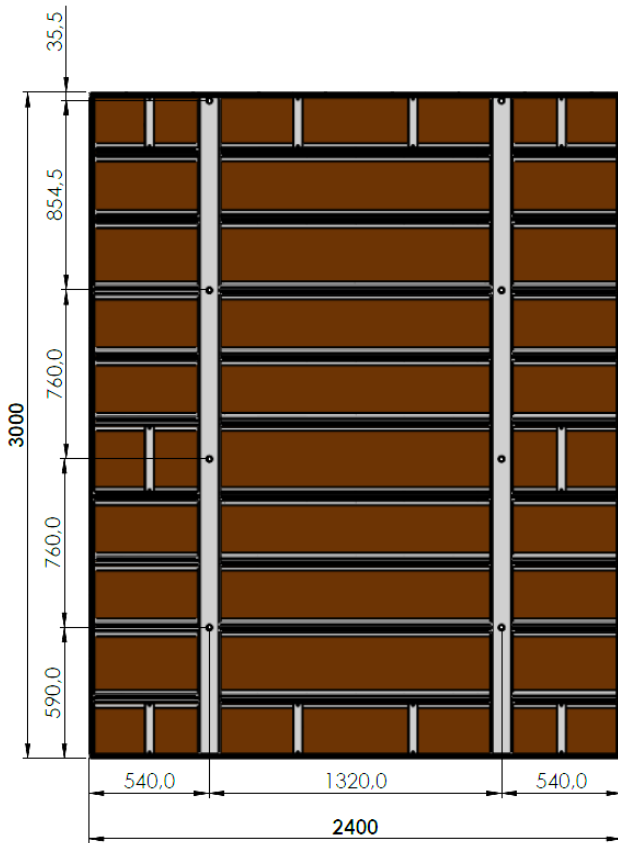
Tie rod location height in standard Bauframe panels:



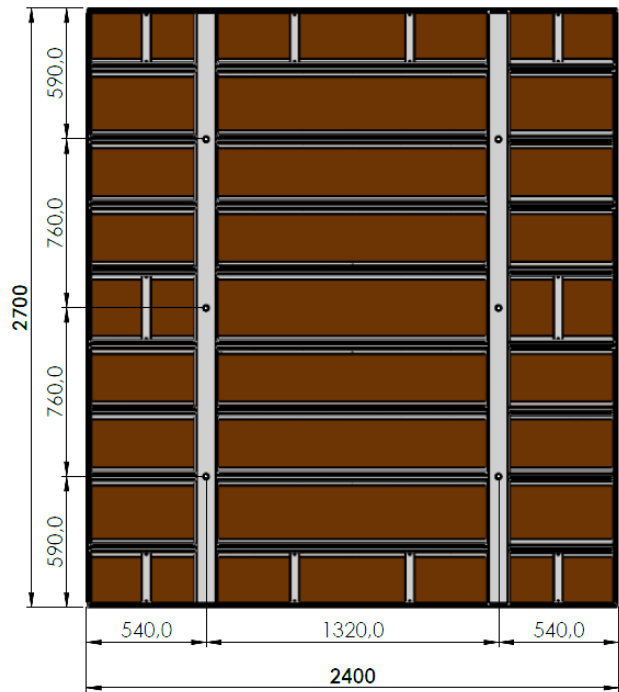
Bauframe panels are made of rigid, steel profiles - the external one is 121 mm high and 20 mm wide. The welded frame is protected against corrosion by hot-dip galvanising. The sheathing is made of high-quality 15 mm thick birch plywood covered with phenyl film (basis weight 220 g/cm<sup>2</sup>). Plywood edges are protected by shaped profiles.

Steel panels come with pass-through holes for tie rods in steel profiles (side 60 x 60 mm, thickness 16 mm). They protect the panel sheathing from damage during tie rod assembly and disassembly. Their installation (insertion) is facilitated by the parabolic socket shape.





The large-sized Bauframe XXL panels facilitate installing large-surface formwork sets demonstrating high aesthetic values. They are available only in the steel version of the Bauframe system (height 270 cm and 300 cm).



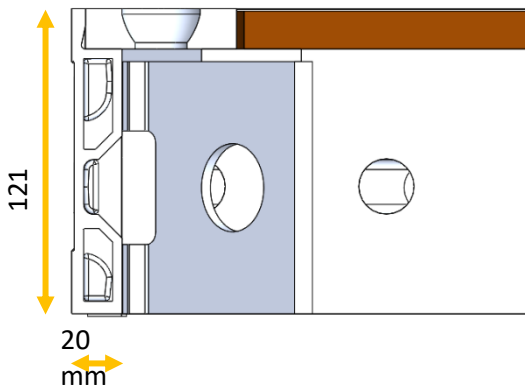
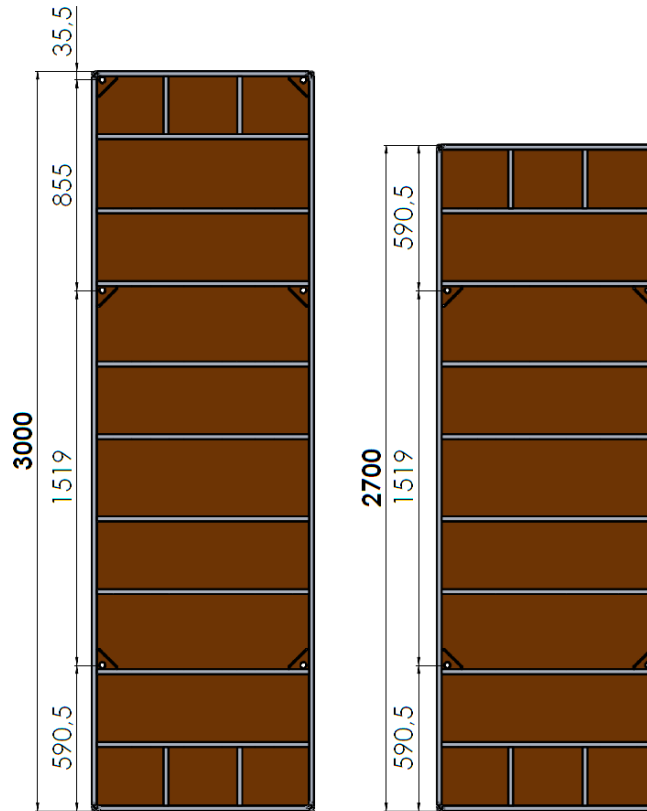
Bauframe VZ universal multi-hole panels are useful when installing rectangular pillar formwork. Due to the fact that they feature more tie rod holes than standard panels, they facilitate formwork dimension adjustment in the 5 cm module. The VZ accessory corner fixture also makes it possible to connect a VZ panel with a standard panel, e.g. when forming rectangular corners.





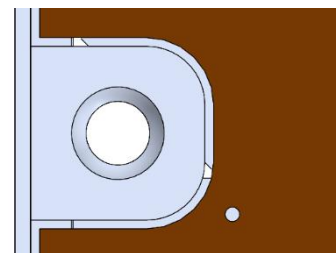
### 5.3. Bauframe Alu panel

Tie rod location height in standard Bauframe Alu panels:



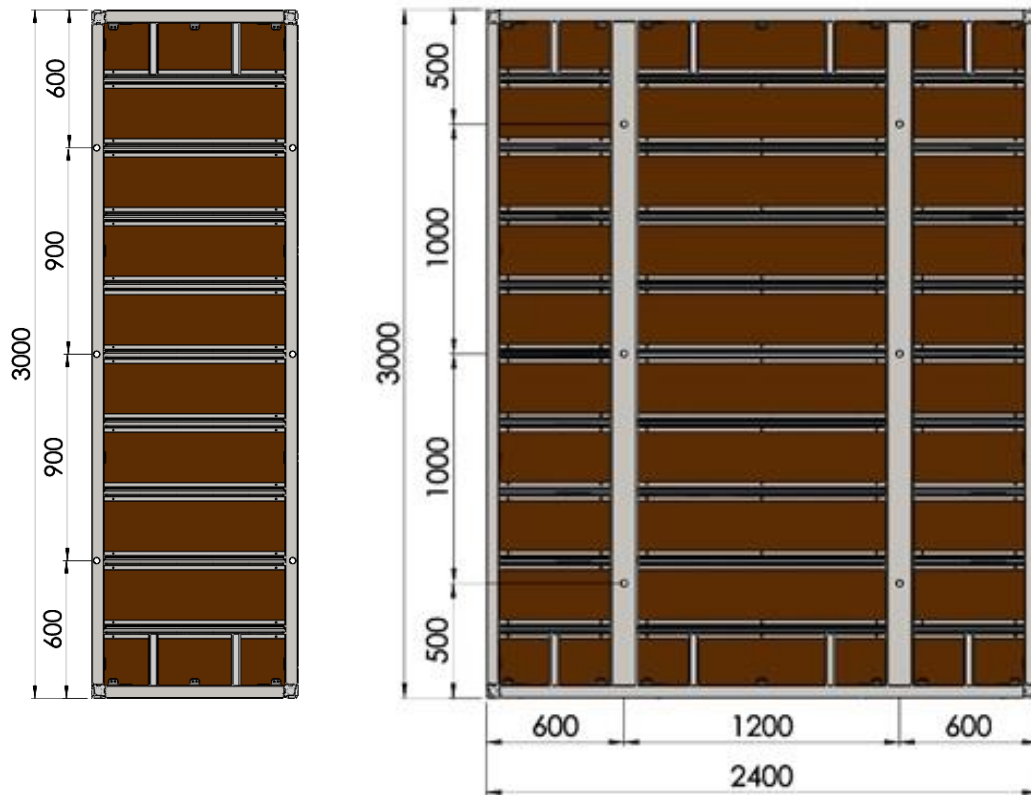
Bauframe Alu panels are made of rigid and hardened aluminium profiles - the external one is 121 mm high and 20 mm wide. The aluminium frame design makes it fully compatible with its steel equivalent and can be used interchangeably in formwork structures. The sheathing is made of high-quality 15 mm thick birch plywood covered with phenyl film (basis weight 220 g/cm<sup>2</sup>). Plywood edges are protected by shaped profiles.

Similarly to steel panels, aluminium panels come with pass-through holes for tie rods made in aluminium profiles. They perform the same function as steel panel profiles.



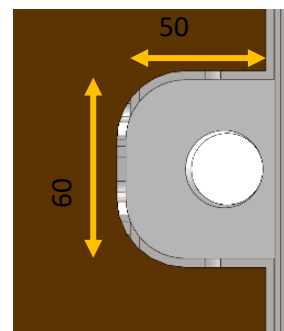
## 5.4. Bauschal panel

Tie rod location height in standard Bauschal panels:



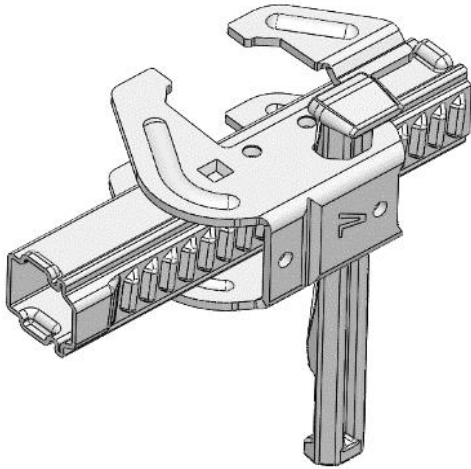
Bauschal panels are made of rigid, steel profiles - the external one is 121 mm high and 55mm wide. The welded frame is protected against corrosion by hot-dip galvanising. The sheathing is made of high-quality 21 mm thick birch plywood covered with phenyl film (basis weight 220 g/cm<sup>2</sup>). Plywood edges are protected by shaped profiles.

Each Bauschal panel comes with pass-through holes for tie rods made in steel tapered sleeves inserted into the external profile. Similarly to Bauframe panels, the hole outlet from the sheathing side is made in a steel profile (profile dimensions 50 x 60 mm, thickness of 21 mm). They protect the panel sheathing from damage during tie rod assembly and disassembly. Their installation (insertion) is facilitated by the tapered socket shape.



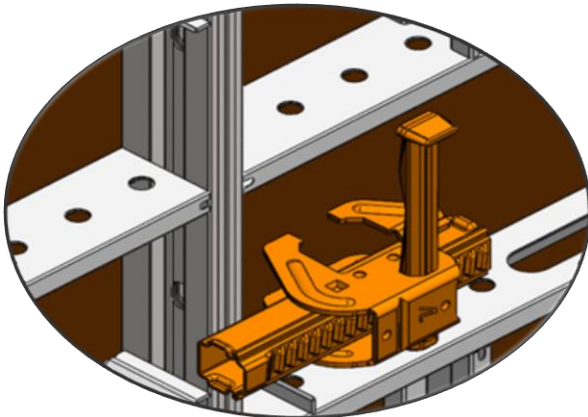
## 6. Assembly and disassembly

### 6.1. Baukrane wedge lock



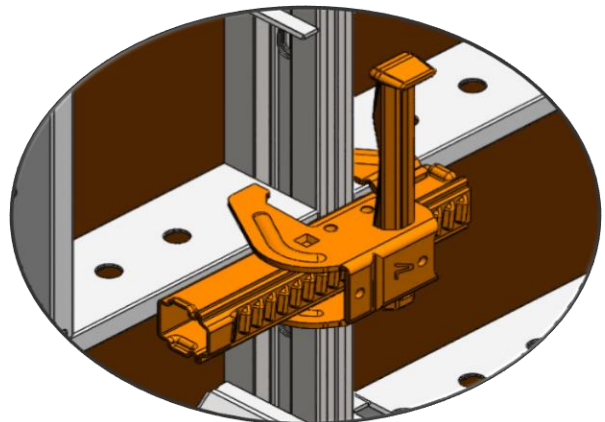
Baukrane wedge locks connect panels in a manner resistant to stretching and bending. They facilitate connecting Bauframe and Bauframe Alu system panels with a wooden supplementing element (width up to 13,5 cm). For Bauschal panel connections, the supplementing element width is 10 cm. Each time before starting work, check the condition of each lock and its correct fastening.

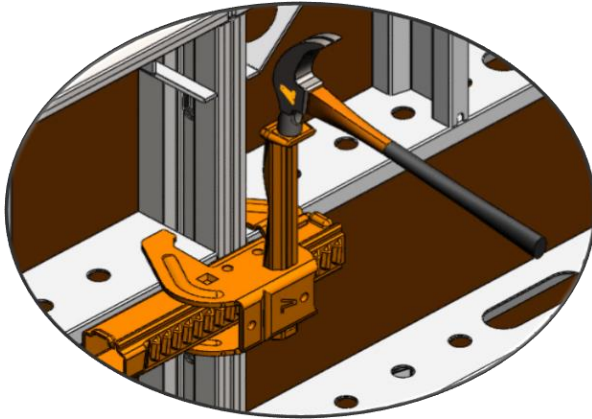
### 6.2. Installing the wedge lock



1. Place the lock between panels. Preferably, the lock should be installed in the location of crossbars. Thanks to this, the connection is resistant to stretching and also stiffened by the lock body.
- 2.

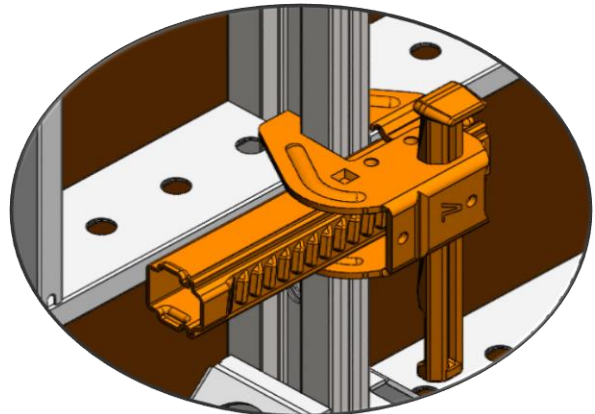
3. Move the jaws towards panels and shift the wedge to the profiled part. Pre-lock the jaws.
- 4.





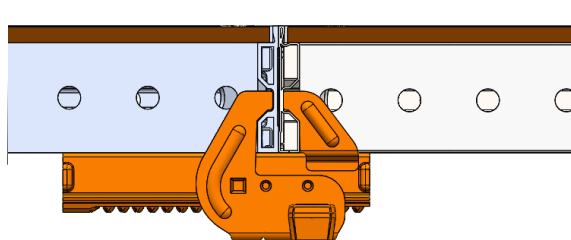
5. Hitting the specially shaped wedge part with a hammer results in driving the jaws towards the panel profiles and creating a strong connection.
- 6.

7. A fully locked lock creates a rigid and stretch-resistant connection. The design tension strength of Baukrane wedge locks is 20 kN. The lock should be disassembled in a manner reverse to its assembly.
- 8.

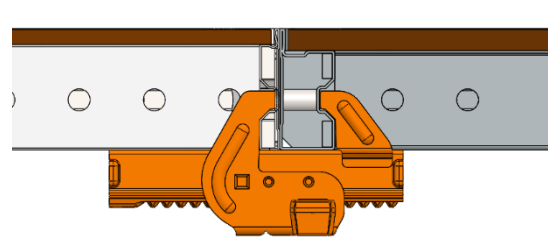


The Baukrane UNI wedge lock is installed in the same manner.

Baukrane wedge locks and Baukrane UNI wedge locks are used to create solid connections between Bauframe, Bauframe Alu and Bauschal system panels, without the use of any compensation elements.

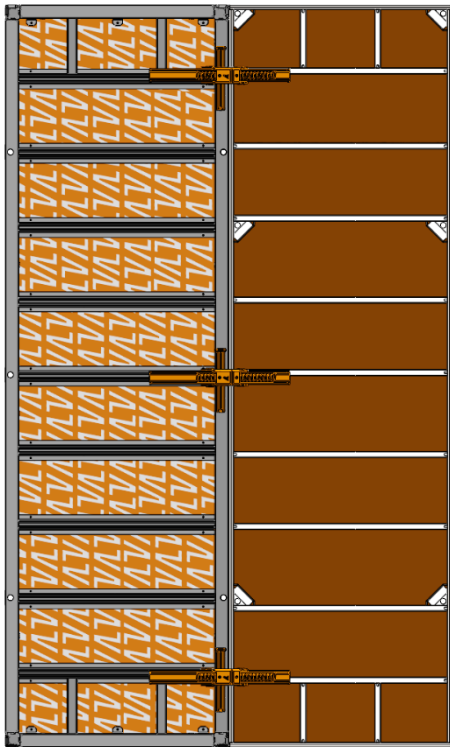


Bauframe and Bauframe-Alu panel connection

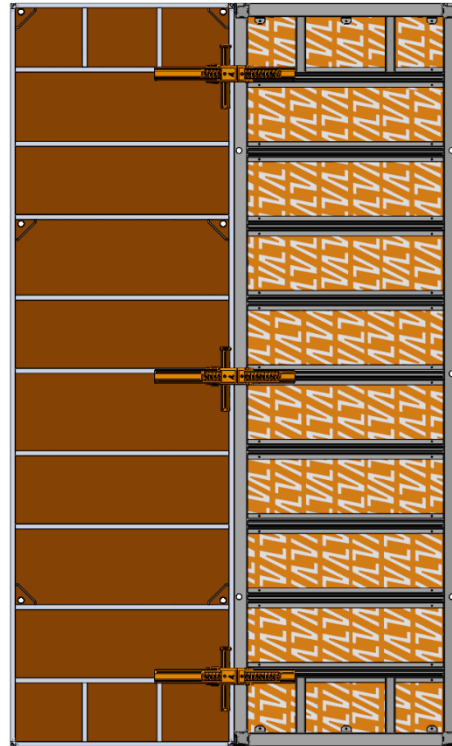


Bauframe and Bauschal panel connection

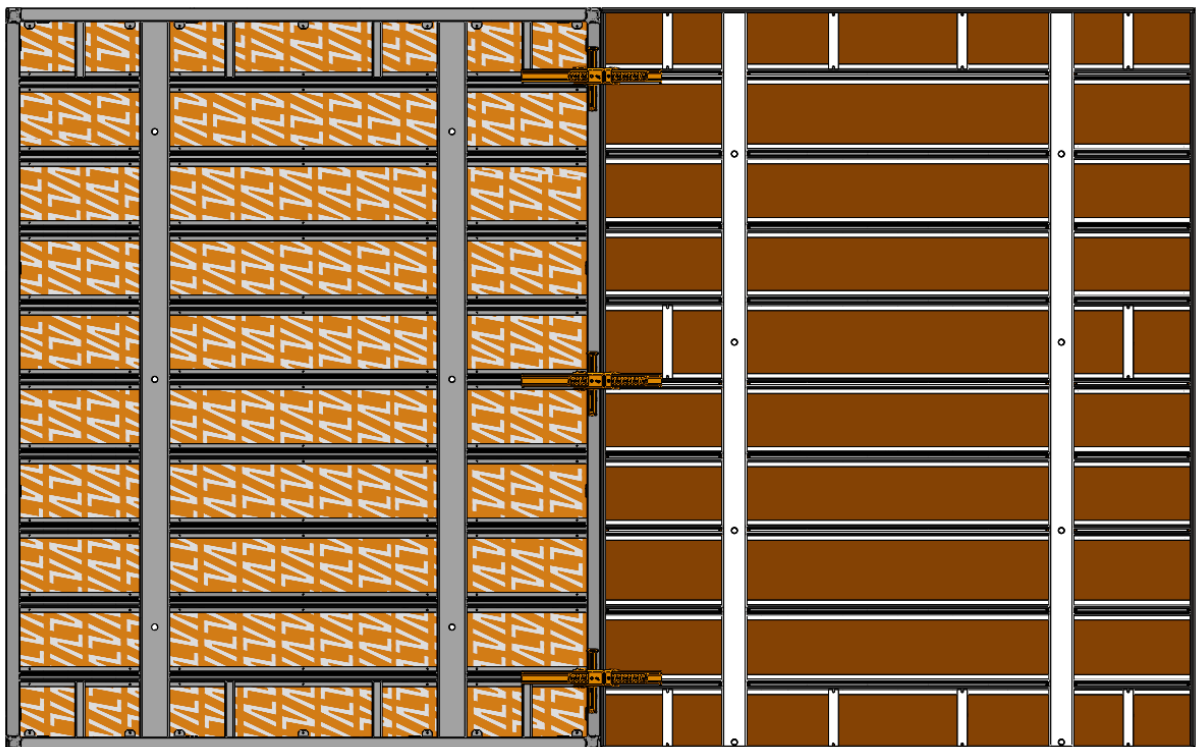
Bauschal and Bauframe panel connection



Bauframe Alu and Bauschal panel connection

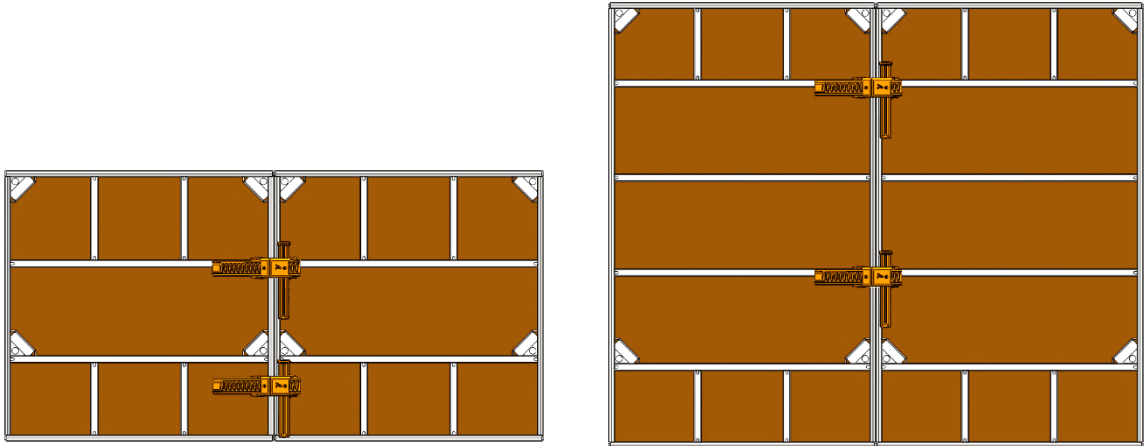


Bauschal Mamut and Bauframe XXL panel connection

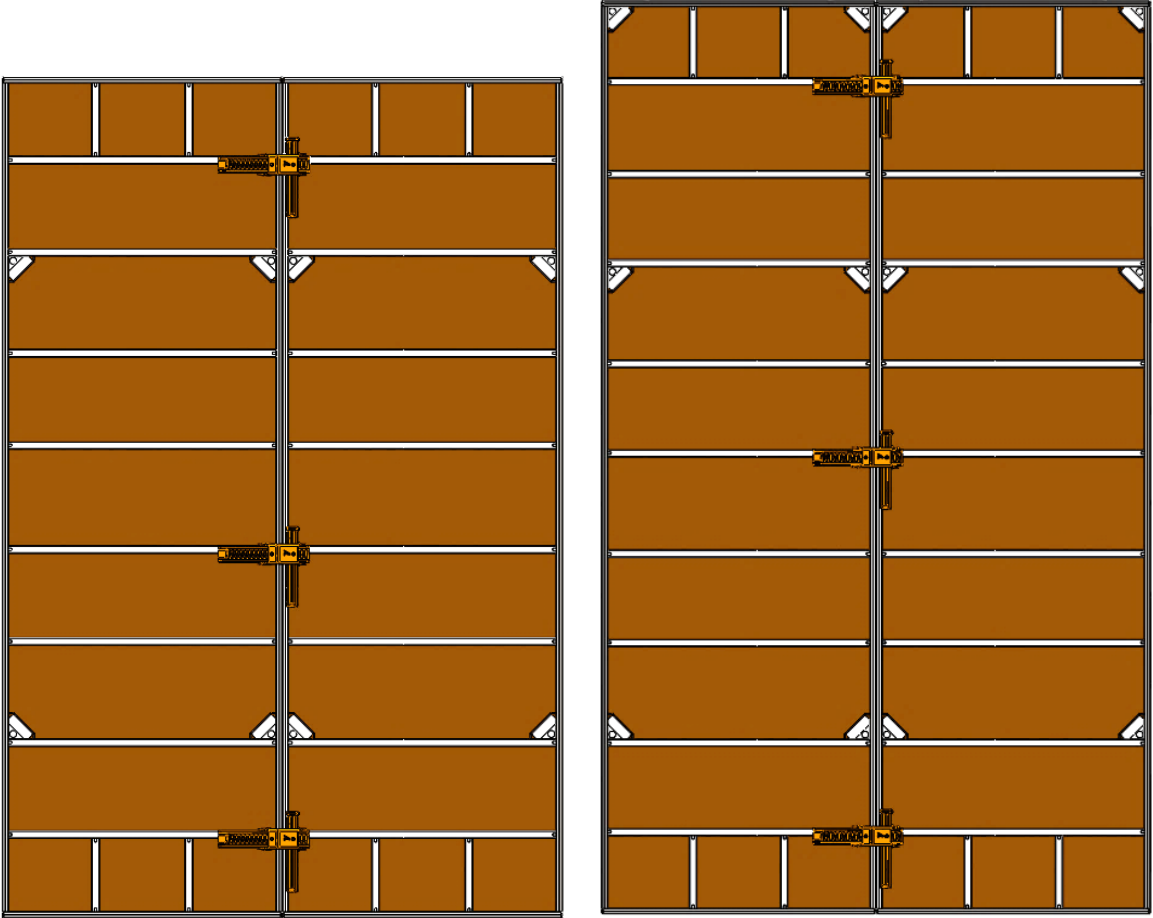


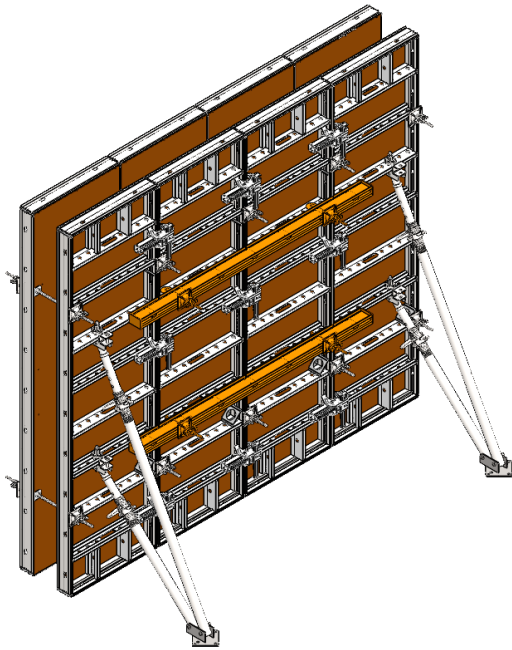
6.3. Location of wedge locks

90 cm and 150 cm high panels are connected by means of two wedge locks.



270 cm and 300 cm high panels are connected by means of three wedge locks.

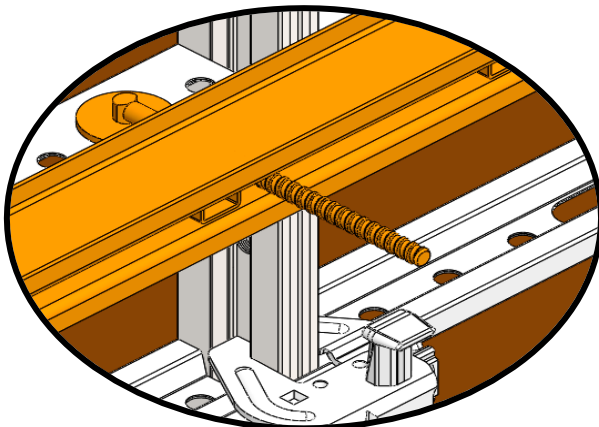
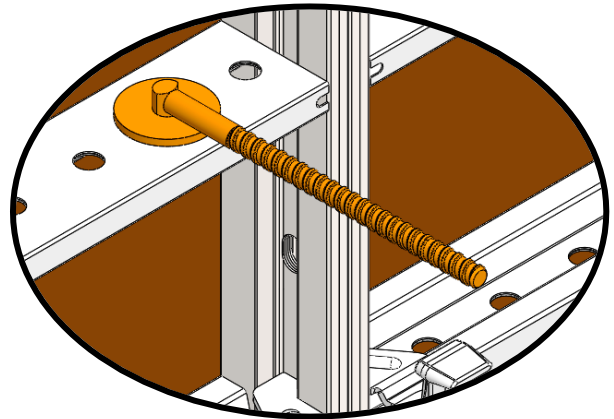




When installing longer sections consisting of standard panels, make sure that the formwork is stiffened as required. It makes it possible to distribute stresses on a larger formwork surface and avoid excessive local deformations caused by laying the mix, excessive work rate, use of a mix of liquid consistency and activities related to mix thickening.

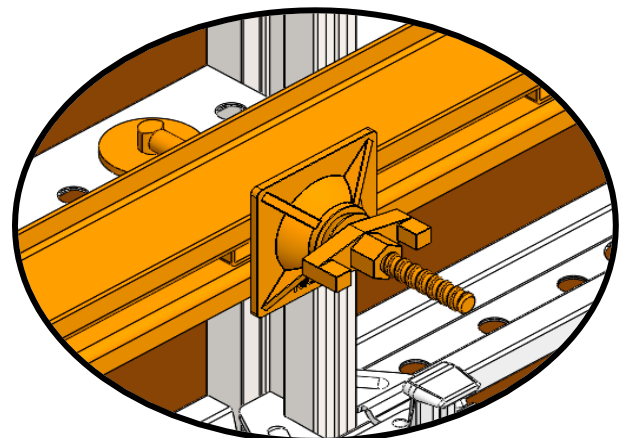
To stiffen the formwork, use straightening beams or stiffening locks fastened to the formwork panels using lock tensioners and centring nuts, nuts  $\varnothing$  100 or articulated nuts.

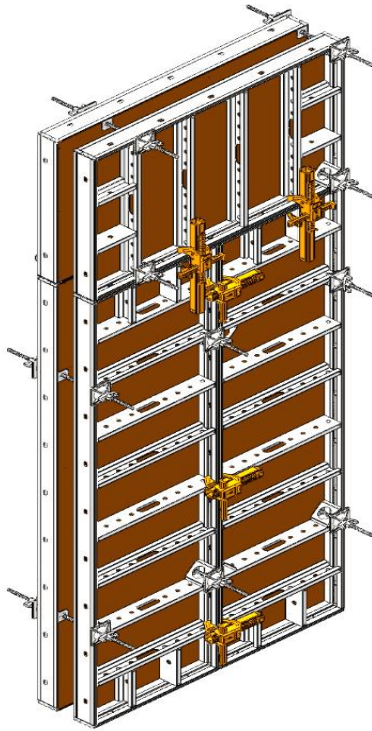
1. The lock tensioner should be placed in the functional opening of the internal profile. The design of this fastener facilitates its installation on a profile placed horizontally or vertically. Tensioners can be mounted in adjacent panels on one or different levels. Then the stiffening beam is mounted diagonally.
- 2.



2. Place the beam directly on the lock tensioner installed in the panel.

3. A centring nut, nut  $\varnothing$ 100 or articulated nuts are used to tie and simultaneously pull the beam against the panels, which results in stiffening the formwork.
- 4.

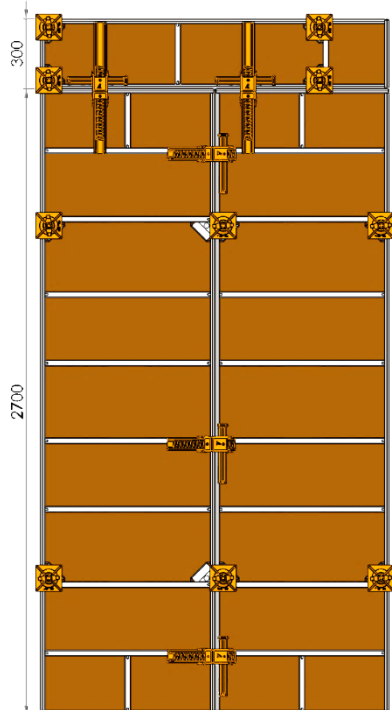




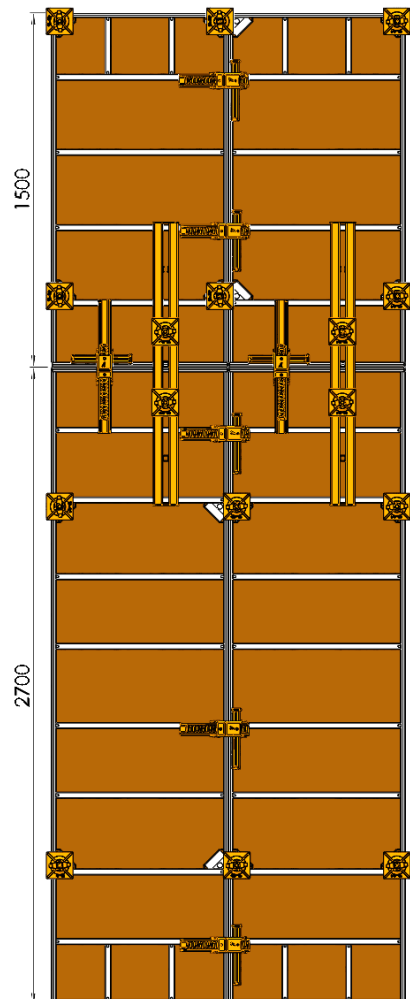
Panels placed on top of one another using a top section are connected in the same way as the bottom layer panels. 90 cm and 150 cm high top sections must be connected by means of two wedge locks. 270 cm and 300 cm high top sections must be connected using three locks.

At each contact point of the elements, install one wedge lock for each connected element or per each 1 m of the connection width, if the top section panels are arranged horizontally. If the top section panels are positioned vertically, use a UNI wedge lock to connect them, as its range covers the panel crossbars. In case wide contact points and high top sections (above 60 cm) are necessary, a top section should be additionally stiffened with a straightening beam of correct length.

### Height 300 cm

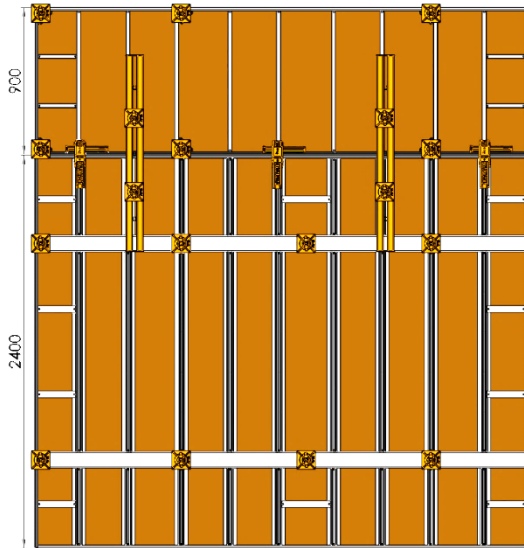


### Height 420 cm

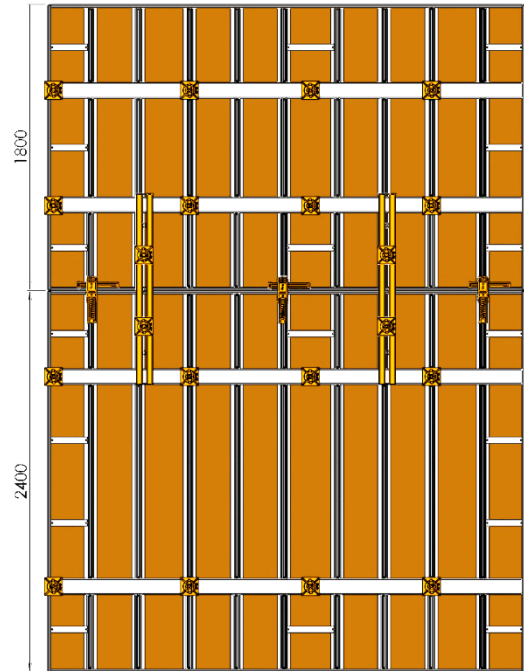




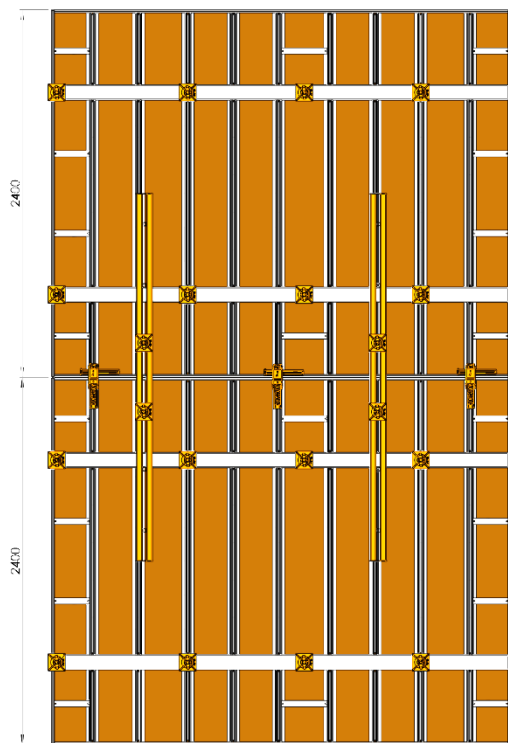
### Height 330 cm



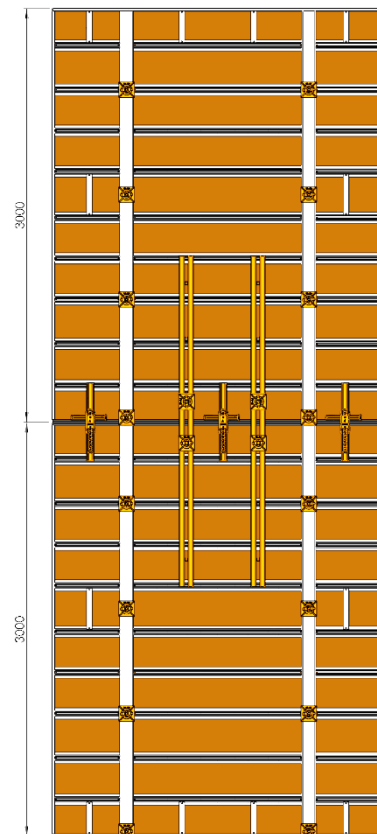
### Height 420cm



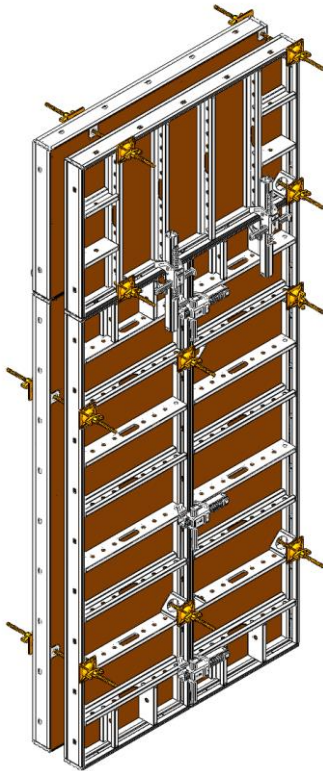
### Height 420cm



### Height 600 cm



## 6.4. Tightening the panels

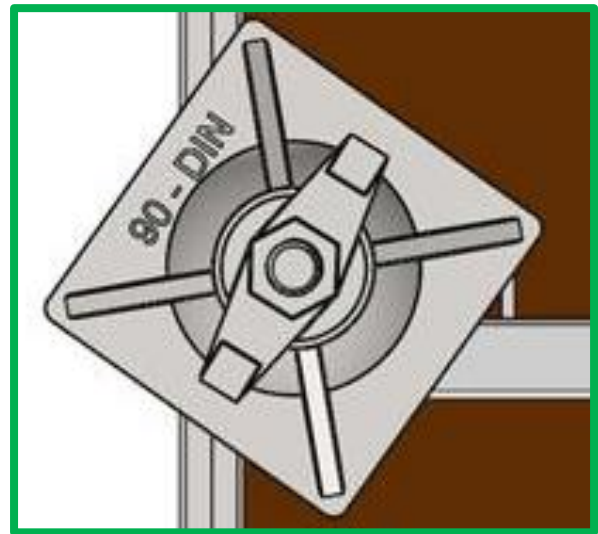
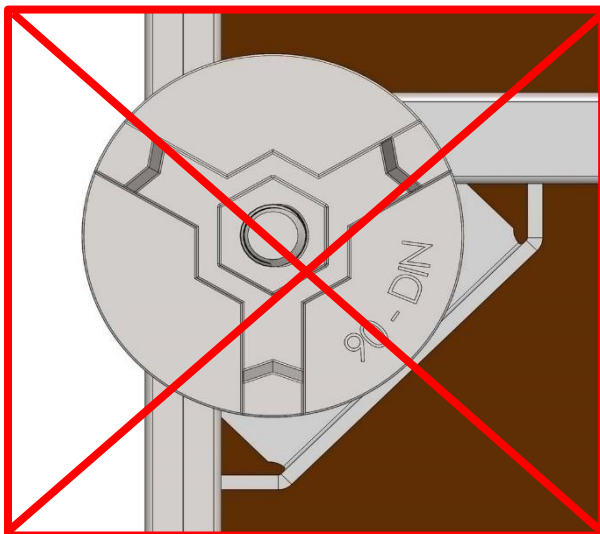


Each Bauframe and Bauframe Alu standard panel (width up to 90 cm) comes with four holes for tie rods. In steel panels, they are made in a steel profile to ensure plywood protection against damage during tie rod installation, which significantly extends its service life and reduces the formwork usage costs. A similar solution is implemented in Bauframe-Alu and Bauschal panels.

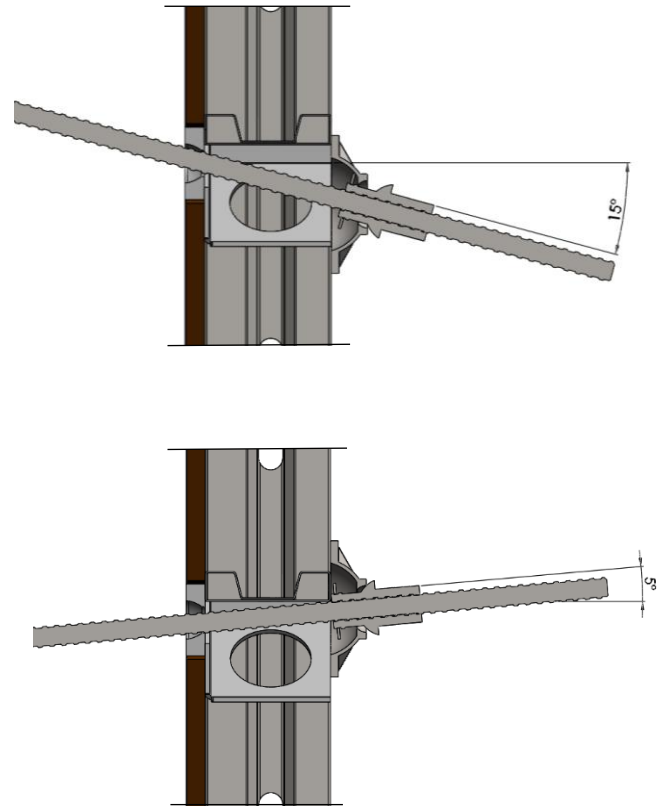
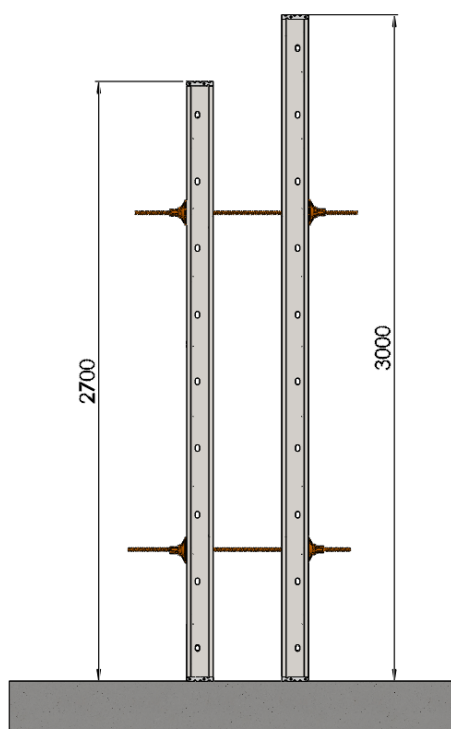
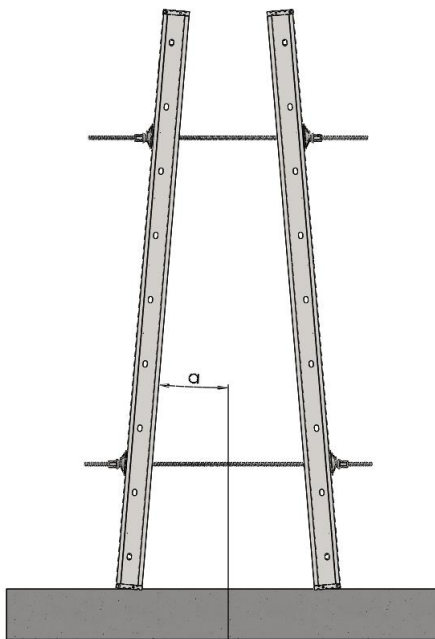
Panels placed oppositely are tightened using DW pass-through tie rods ( $\varnothing 15$  mm) and tie rod articulated nuts. With Bauschal panels, 20 mm diameter tie rods can be used. To make the connection, select one of the pass-through holes. The remaining holes should be secured with Bauframe plugs. Holes in VZ and Bauschal panels should be secured with universal plugs. One tie rod holds two adjacent panels at the same time.

**NOTE! Do not use disc nuts  $\varnothing 70$  and  $\varnothing 100$  to tighten the panels!**

**Use only tie rod articulated nuts!**



The socket with a pass-through hole in Bauframe and Bauframe Alu panels facilitates tightening panels with tie rods set at an angle to the plywood plane. When a tie rod articulated nut is used, the adjustment range is 5° or 15°, depending on the direction of the tie rod inclination.



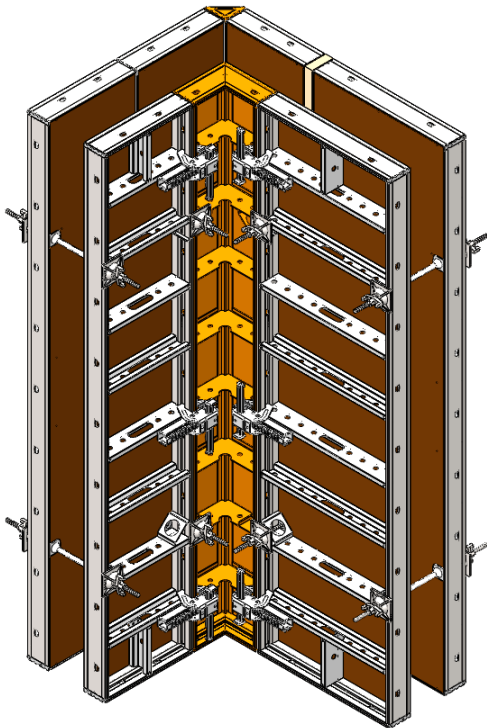
The option to install tie rods inclined at an angle to the plywood plane makes it possible to create formwork for walls with variable thickness at certain heights. The maximum angle obtained for Bauframe and Bauframe-Alu panels, using dedicated tie rod articulated nuts, is 5°. It results in a 2.7 m high wall thickness variation amounting to 48 cm.

The tie rod layout in Bauframe and Bauframe Alu panels facilitates connecting 270 cm and 300 cm panels.

**Due to the different tie rod layout, it is not possible to connect the Bauframe and Bauschal system panels opposite to each other.**

## 7. Forming the corners

### 7.1. Rectangular corners



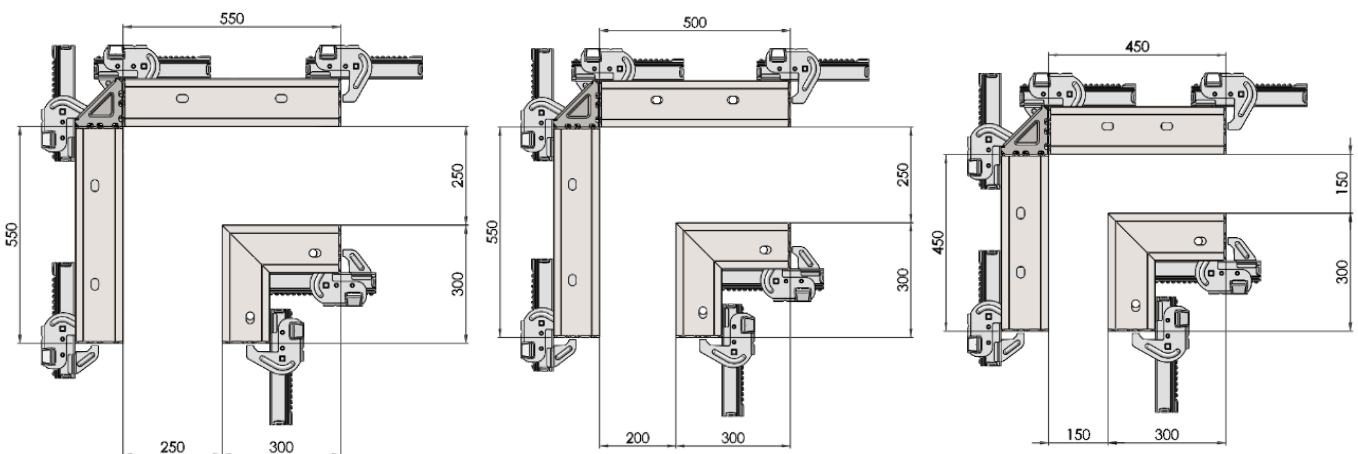
The basic element used to construct a rectangular corner is the Bauframe 30 x 30 cm internal corner. The requested wall thickness is obtained by correct selection of external panels which form corners.

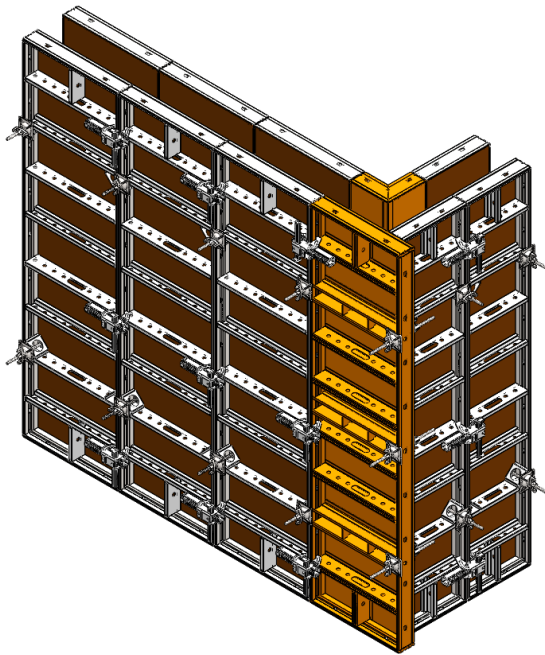
The basic element allowing to construct corners from the outside is the Bauframe external corner. Its design allows it to be connected to adjacent panels using a Baukrane wedge lock or alternatively - using a centring tie rod with a  $\varnothing 70$  disc nut.

Wooden or steel compensation supplementing elements may be placed on the external or internal side of the corner.

panel height	number of locks connecting an external corner
90 cm	2x2
150 cm	2x3
270 cm	2x5
300 cm	2x5

Examples of rectangular corner structure made using an external corner:



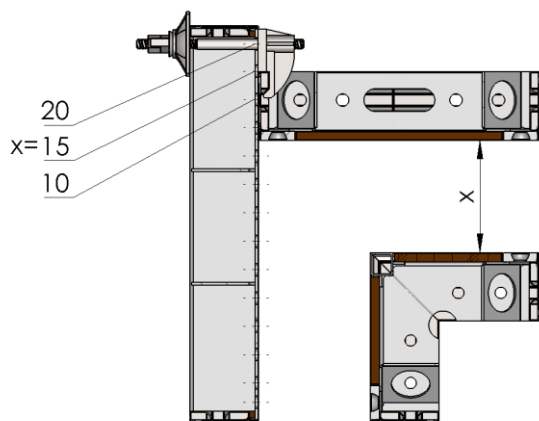


Using a VZ multi-hole panel is an alternative method to create a rectangular corner from the outside. This panel must be connected to a standard panel using the VZ corner fixture.

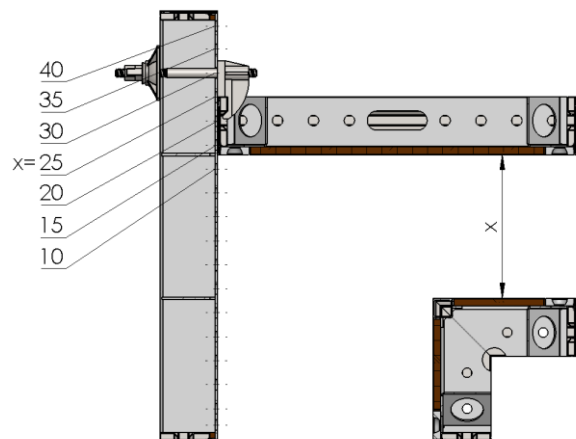
The required wall thickness is obtained by selecting a correct hole in the multi-hole panel and passing the VZ pin through it. The 70VZ panel allows you to create corners with wall thickness of up to 20 cm, while the 90VZ panel - up to 40cm, in a 5 cm module. Such connections must be made using tie rod articulated nuts.

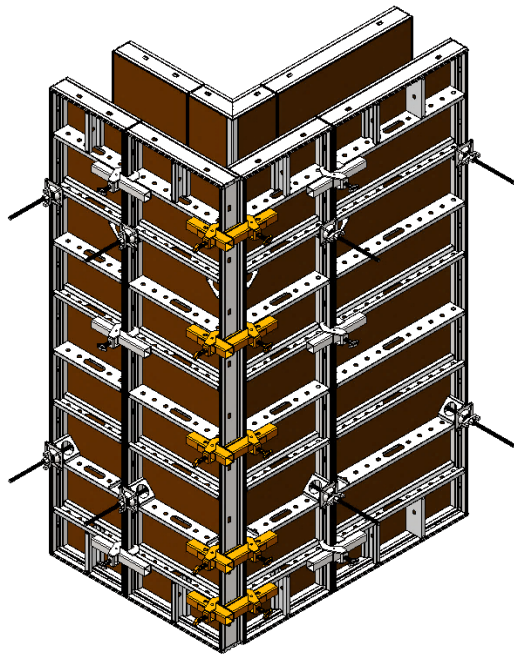
Wooden compensating inserts may be located on the inside or outside of the corner.

Rectangular corner made of 70VZ panel:



Rectangular corner made of 90VZ panel:





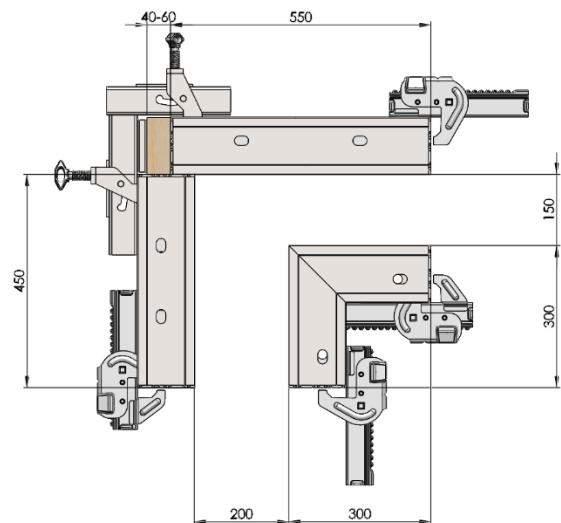
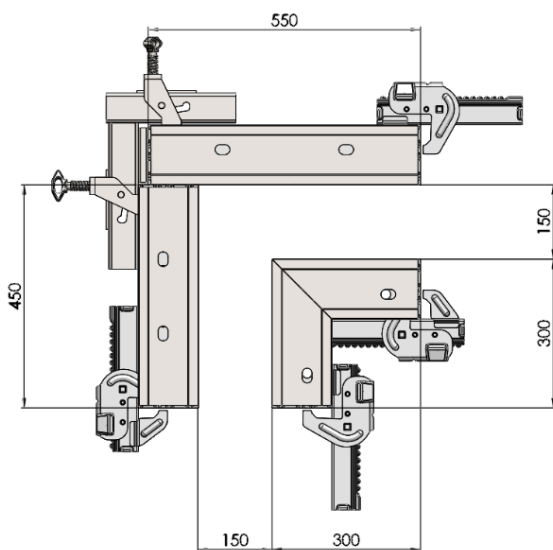
Rectangular corners can also be created using two Bauframe or Bauframe Alu panels connected by means of corner locks with a screw. In this case, it is necessary to maintain a 5 or 10 cm panel overlap section and increase the number of corner locks in relation to their standard number.

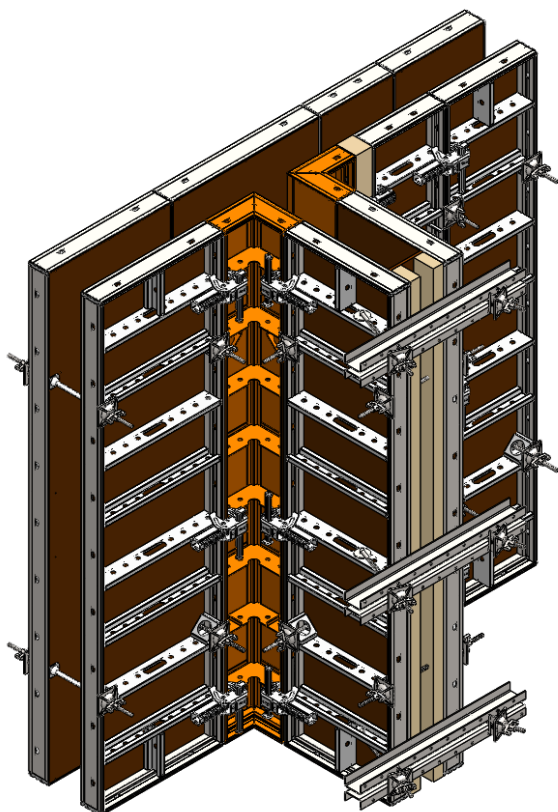
Due to the increased fresh concrete mix pressure exerted on an external corner, the number of corner locks used must be increased, as compared to the standard connection of panels outside a corner. See the table below for the required number of corner locks.

**Corner locks cannot be used to connect Bauschal panels in corners.**

panel height	number of corner locks
90 cm	2
150 cm	3
270 cm	5
300 cm	5

Examples of rectangular corner structure made using a corner lock:





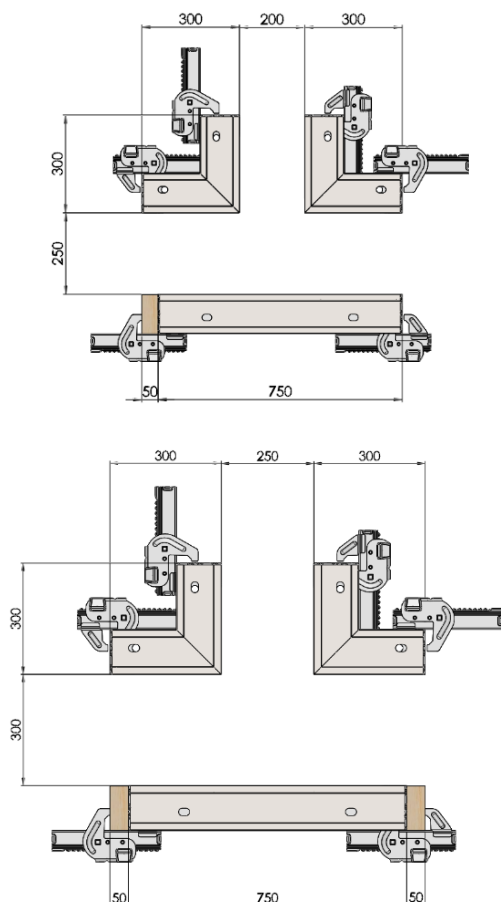
Rectangular T- and X-shaped corners can be formed using only internal corners with a 30 cm arm.

T-shaped wall connections are formed similarly to L-shaped corners. Fitting to the required wall thickness is achieved by means of correct selection of an external panel and supplementing inserts.

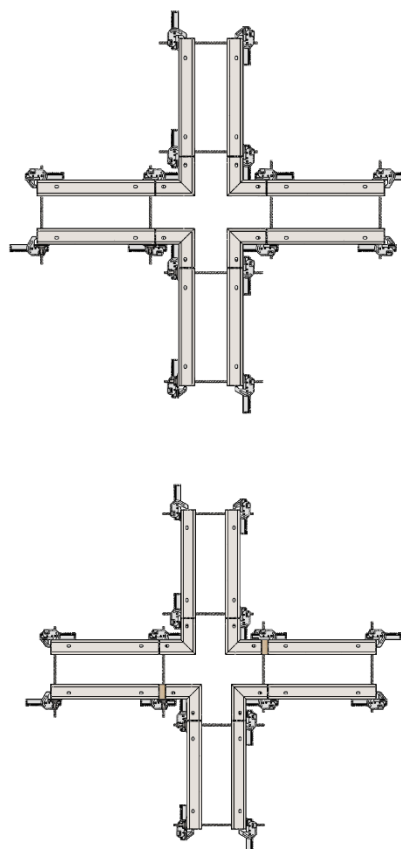
Wooden or steel compensating inserts may be located on the inside or outside of the corner.

X-shaped corners are formed in the same way as T-shaped corners. Different wall thickness is obtained by selecting panels forming a corner or using supplementing inserts.

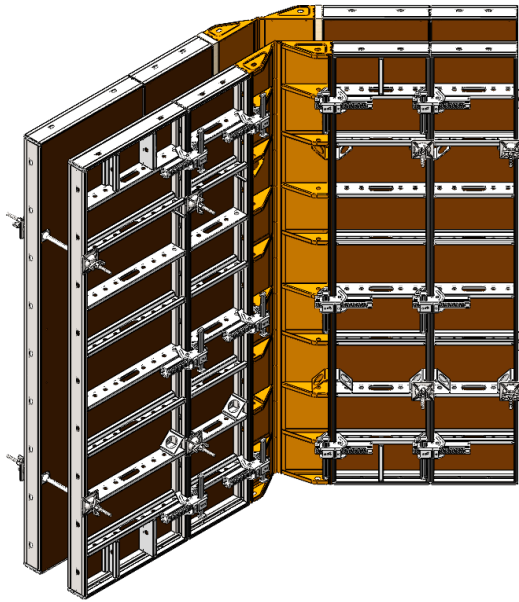
Examples of a T-shaped corners:



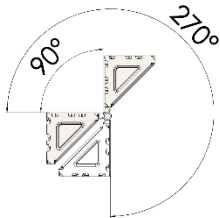
Examples of X-shaped corners:



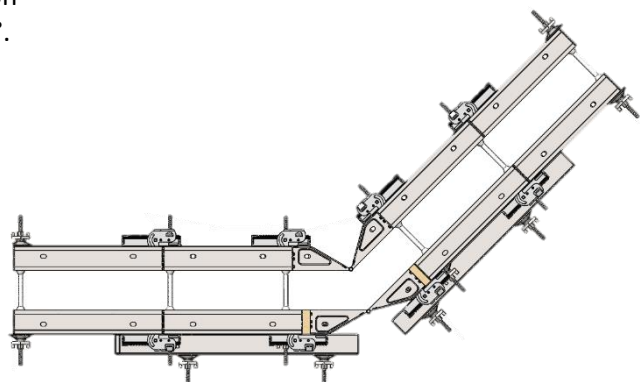
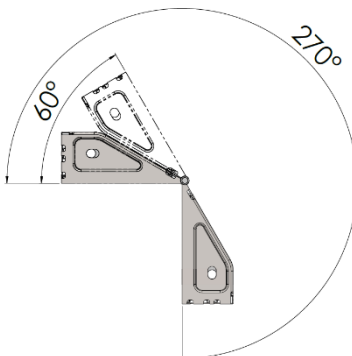
## 7.2. Acute- and open-angle corners



The 15x15 articulated corner allows operation within the adjustment range from 90° to 270°.



The 30x30 articulated corner allows operation within the adjustment range from 60° to 270°.



Acute- and open-angle corners can be formed using articulated corners with 15 cm or 30 cm arms. The narrower one is made entirely of steel, while the wider one comes with plywood sheathing and holes for tie rods arranged analogously to internal corners (30 x 30 cm).

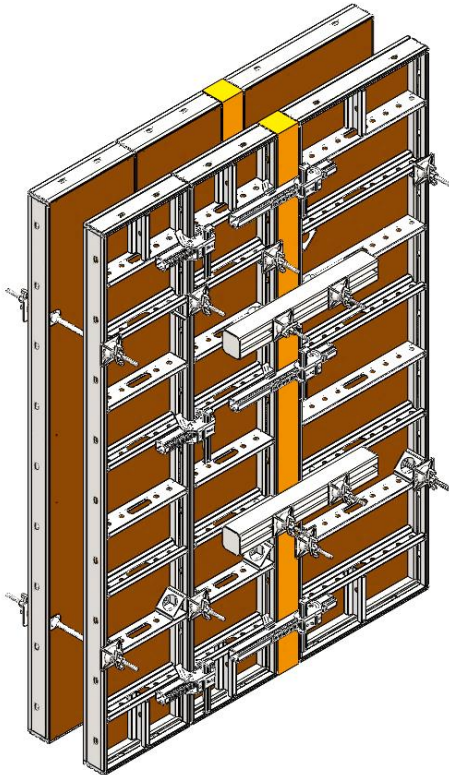
Articulated corners are available only in the steel version. They are fully compatible with Bauframe Alu and Bauschal panels.

When constructing formwork with articulated corners, pay special attention to the amount of space available for locks. Especially when using a 15 x 15 cm acute-angle corner, it is necessary to connect it with panels using centring tie rods. Use the same number of these tie rods as wedge locks.

Due to the pressure exerted by fresh concrete mix from the outside of the corner, as well as the limited possibility of tightening the panels with pass-through tie rods, multi-hole VZ panels should be used in the corner, and correct stiffening of the formwork and transferring stresses by using straightening beams with tensioners must be ensured.



### 7.3. Length alignment and supplementing



Using a wedge lock, it is possible to make a rigid connection of panels with a possible supplement with a width of up to 13.5 cm. Thus compensating elements with most common dimensions do not require the use of additional accessories.

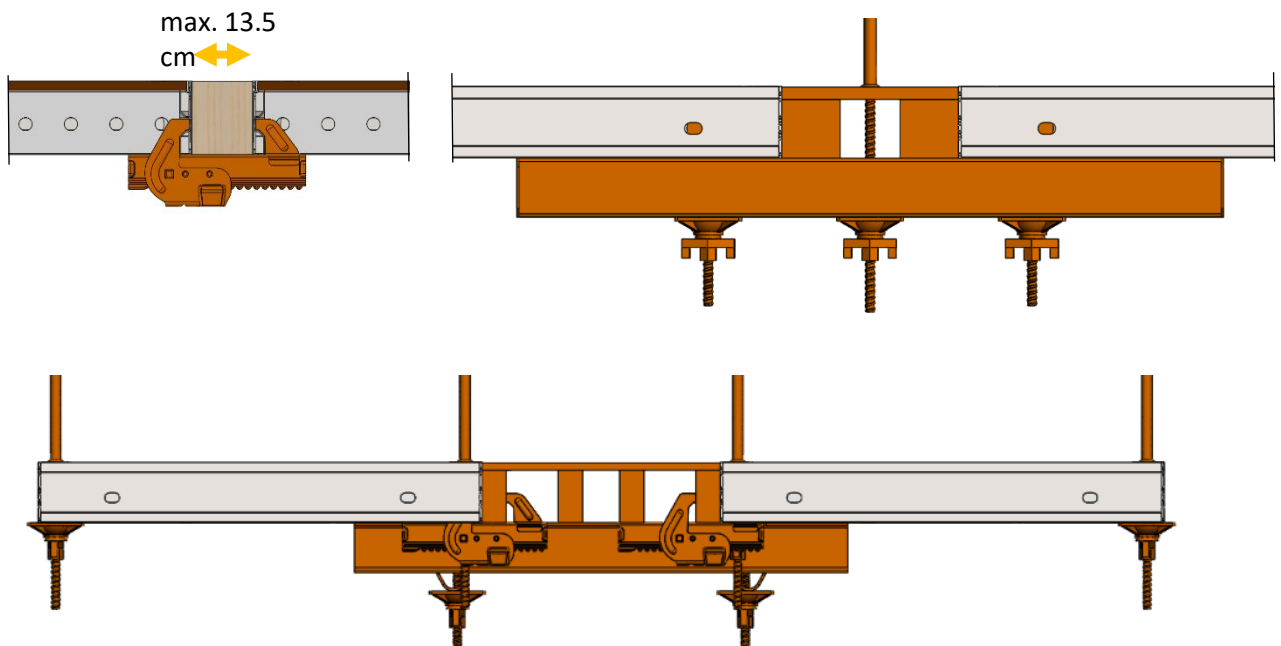
One method of supplementing the formwork length is to use system steel inserts with a width of 5 cm and their multiples.

Larger compensating elements are best created of wooden squares with (8 x 10cm or 10 x 10 cm) and 21 mm plywood cut to correct width.

In the case of supplementing elements larger than 10 cm, the connection should be additionally stiffened with straightening beams.

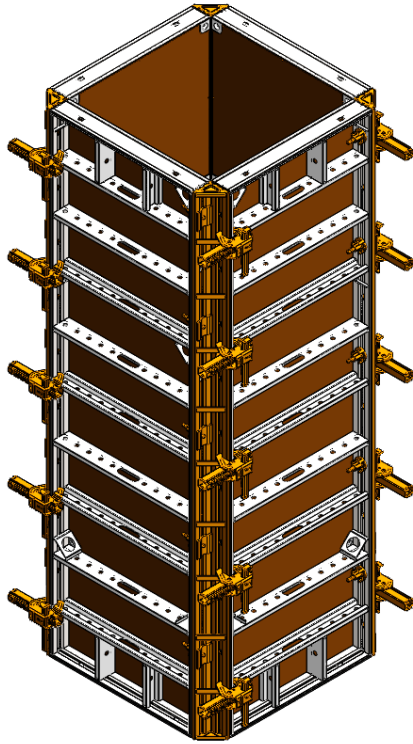
The formwork can be tied via pass-through holes in the panels or directly through the supplementing element.

#### Examples of formwork length supplementing:



## 8. Forming of pillars

### 8.1. Standard panels



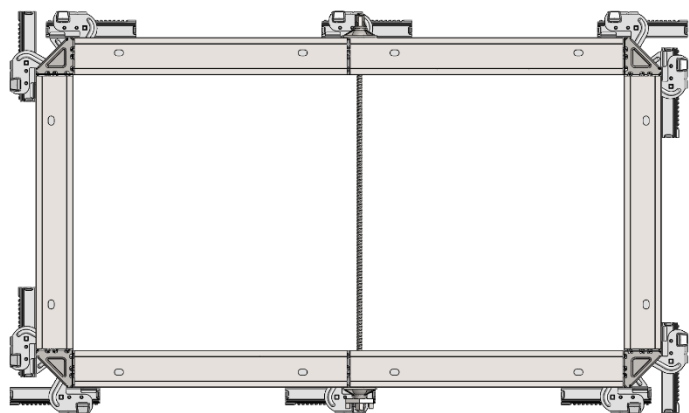
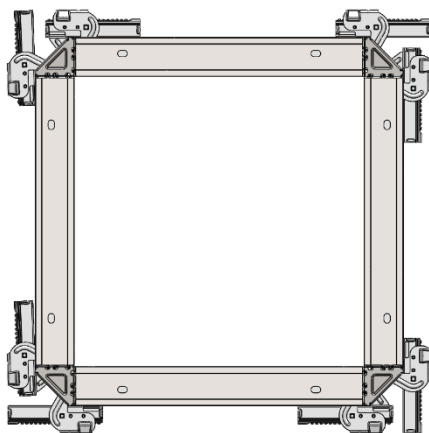
Square and rectangular pillars (dimensions of sides in projection - from 30 cm to 90 cm, in a 5 cm module) corresponding to the width of panels available in Bauframe systems, can be formed using standard panels connected via external corners. The required formwork dimensions are ensured by selecting panels with correct width. Connections are made in the same way as in the case of the external part of a rectangular corner.

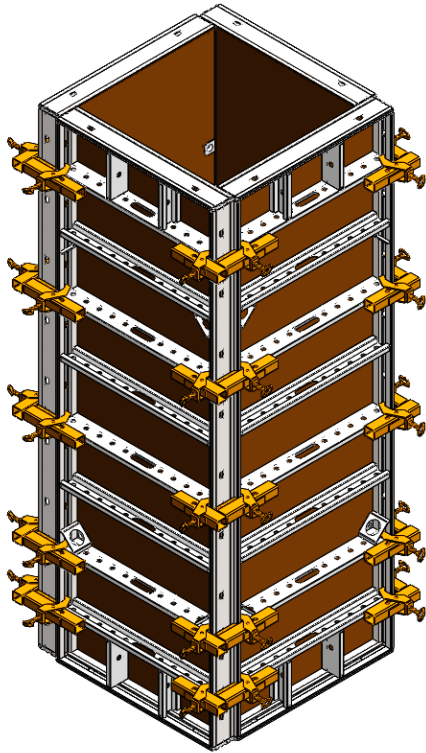
Remember to increase the number of locks or centring tie rods as required - see the table in section 7.1.

Due to the increased formwork effort caused by higher increase in the height of a concrete pillar, this solution should not be used for forming pillars with small cross-sections. It can only be used sporadically during slow-moving concrete works.

**NOTE! When concreting, pay attention to the fresh concrete mix pressure. The permissible fresh concrete mix pressure value for Bauframe and Bauframe Alu formwork is 60 kN/m<sup>2</sup>!**

Examples of pillar formwork constructed using standard panels and external corners:



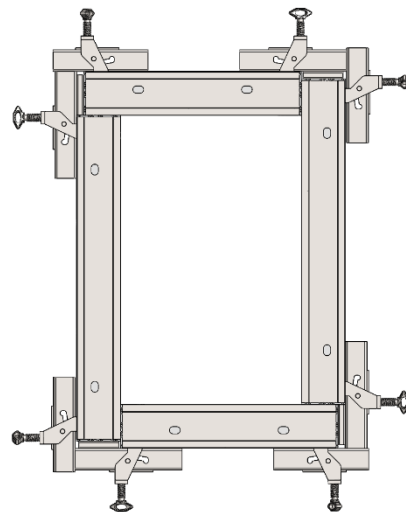
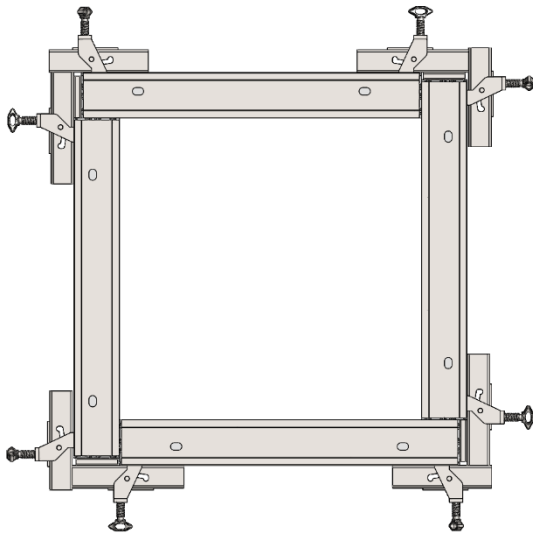


The pillar formwork made of standard panels can also be formed alternatively, using corner locks with screws, similarly as in the case of forming the outer part of the rectangular corner formwork.

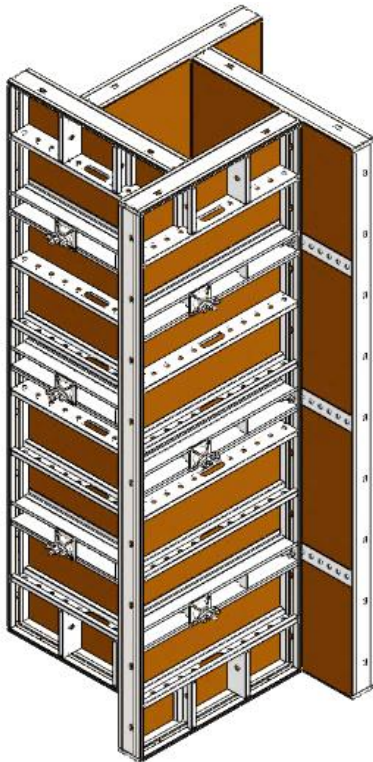
Remember to increase the number of locks or centring tie rods as required - see the table in section 7.1. Do not exceed the permissible fresh concrete mix pressure.

As in the case of formwork constructed with the use of external corners, this solution should not be used to create formwork for small cross-section pillars.

Examples of pillar formwork constructed using standard panels and corner locks:

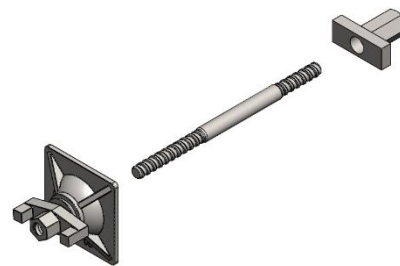


## 8.2. VZ multi-hole panels



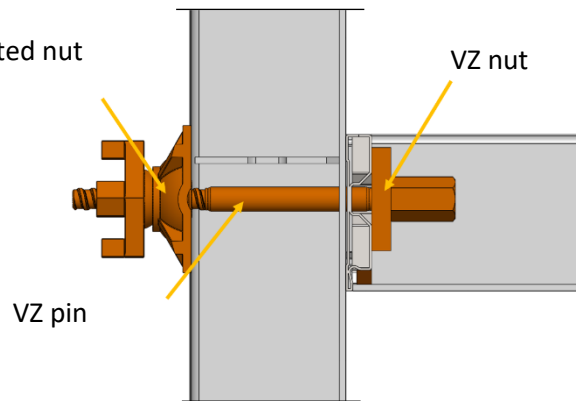
70VZ and 90VZ multi-hole panels, connected in the clockwise direction in the shape of windmill wings, make it possible to form rigid and durable formwork of a rectangular pillar. The dimensions of its sides in projection are 15 cm - 55 cm for 70VZ panels and 15 cm - 75 cm for 90VZ panels, in a 5 cm adjustment module.

The panels are connected by means of a VZ nut, VZ pin and tie rod articulated nut. Do not use nuts  $\varnothing 70$  and  $\varnothing 100$  in such structures.



tie rod articulated nut

The required formwork dimensions are obtained by selecting a correct hole in a formwork panel.

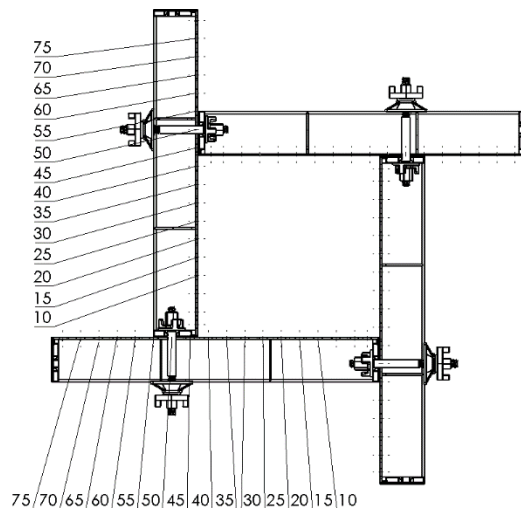
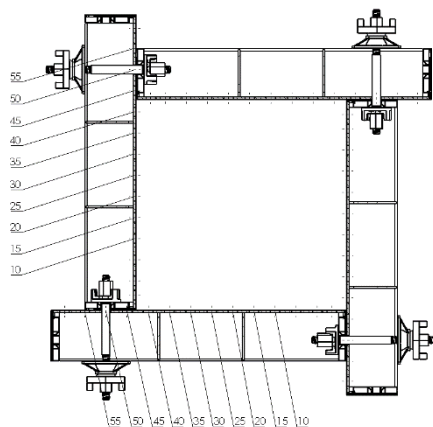


VZ pin

VZ nut

Pillar formwork made of 70VZ multi-hole panels:

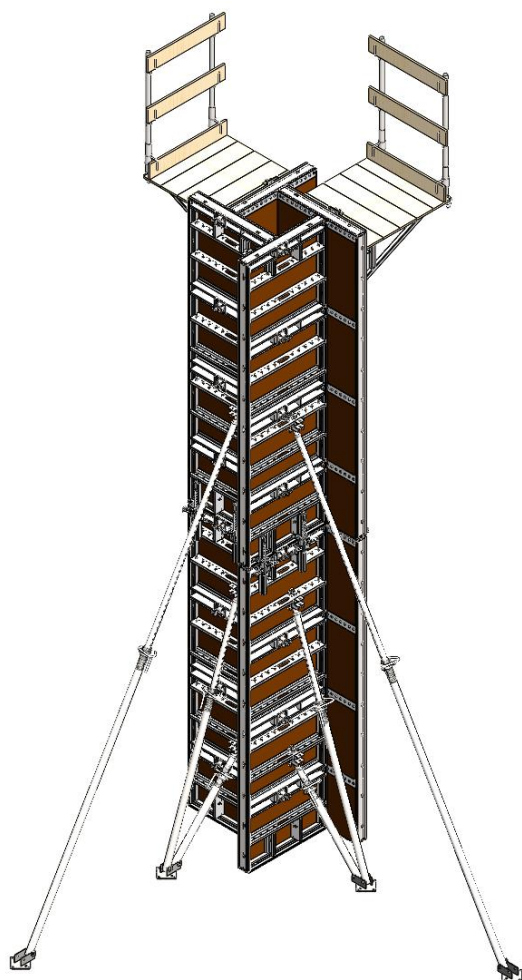
Pillar formwork made of 90VZ multi-hole panels:



Depending on the selected combination of formwork panels and accessories, it is possible to create a pillar formwork of many possible height values. See the table on the side for example lists of elements of pillar formwork made of VZ multi-hole panels at typical height values.

When installing the formwork, it must be rectified correctly in two planes. The formwork with height exceeding 360 cm should be plumbed using one double and one single support for each plane. Care should also be taken to correctly attach the formwork to the ground.

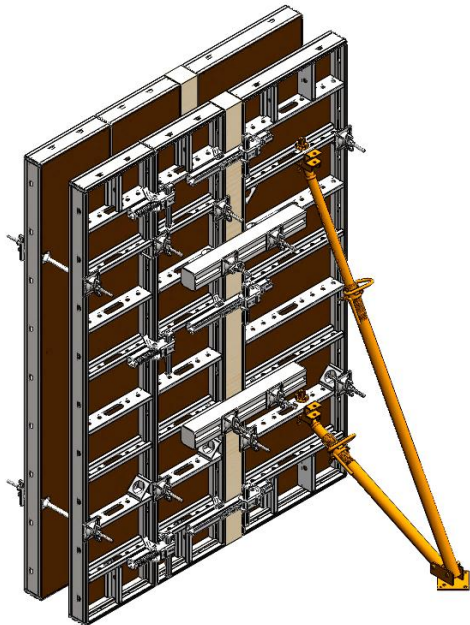
Depending on the actual needs, concreting works can be performed from the level of system working platforms or additional mobile scaffolding.



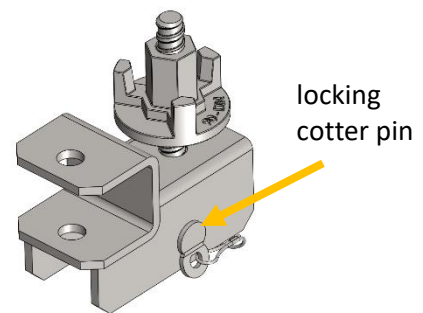
Part no.	Element	Pillar formwork height												
		90 cm	150 cm	270 cm	300 cm	360 cm	390 cm	420 cm	450 cm	480 cm	540 cm	570 cm	600 cm	
	Panel 70(90)x90VZ	4	-	-	-	4	4	-	-	8	-	-	-	-
	Panel 70(90)x150VZ	-	4	-	-	-	-	4	-	-	-	-	-	-
	Panel 70(90)x270VZ	-	-	4	-	-	-	-	-	-	-	4	-	-
	Panel 70(90)x300VZ	-	-	-	4	-	-	-	4	4	-	-	4	8
7271000002	Bauframe wedge lock	-	-	-	-	-	8	-	8	16	8	8	8	8
7270000002	Pin, VZ	8	8	12	16	20	20	20	24	32	24	24	24	32
727100R001	Nut, VZ	8	8	12	16	20	20	20	24	32	24	24	24	32
7000120120	Tie rod articulated nut	8	8	12	16	20	20	20	24	32	24	24	24	32
7272000000	Plumbing support foot	-	2	2	2	2	2	2	4	4	4	4	4	4
7271000300	Plumbing support head	-	2	4	4	4	4	4	6	6	6	6	6	6
7271080130	Plumbing support, 0.9-1.3	-	2	2	2	-	-	-	2	2	2	2	2	2
7270150230	Plumbing support, 1.6-2.4	-	-	2	2	2	2	2	2	2	2	2	2	2
7271280470	Plumbing support, 2.8-4.7	-	-	-	-	-	2	2	2	2	2	2	2	2
7270000005	Foot pin	-	-	2	2	2	2	2	2	2	2	2	2	2

## 9. Formwork rectification

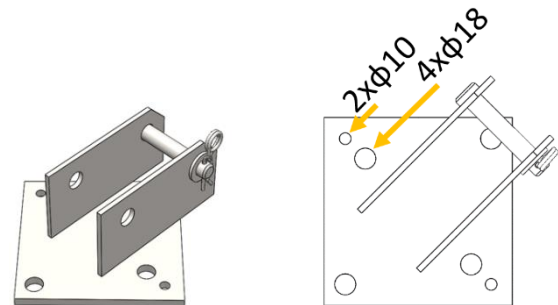
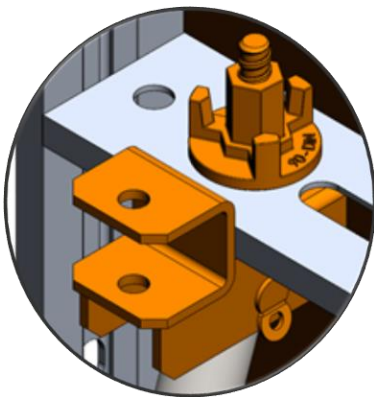
### 9.1. Support head and foot



The formwork is rectified using single or double plumbing supports. The characteristics of each dedicated support facilitates its two-way operation, thanks to which rectification can only be made from one side of the formwork.

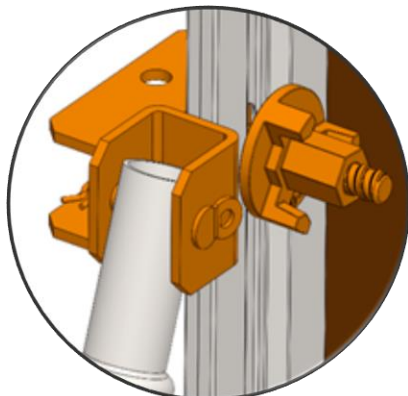


The plumbing support head allows it to be mounted to an internal or external profile. This solution facilitates rectification of formwork in the vertical and horizontal position. Changing the method of head installation only requires removing the cotter pin locking the support in the head and reinstalling it after turning it by 90°.



The design of the plumbing support foot makes it possible to work simultaneously with one or two plumbing supports. Holes in the base sheet metal make it possible to fix the element firmly to the ground.

If it is necessary to store the formwork connected to sets in the standing position, the plumbing supports should be used to ensure stability to the stored set.



## 9.2. Layout

The plumbing support spacing should not exceed 2.5 m.

When installing plumbing supports, make sure that they are correctly fixed to the ground.

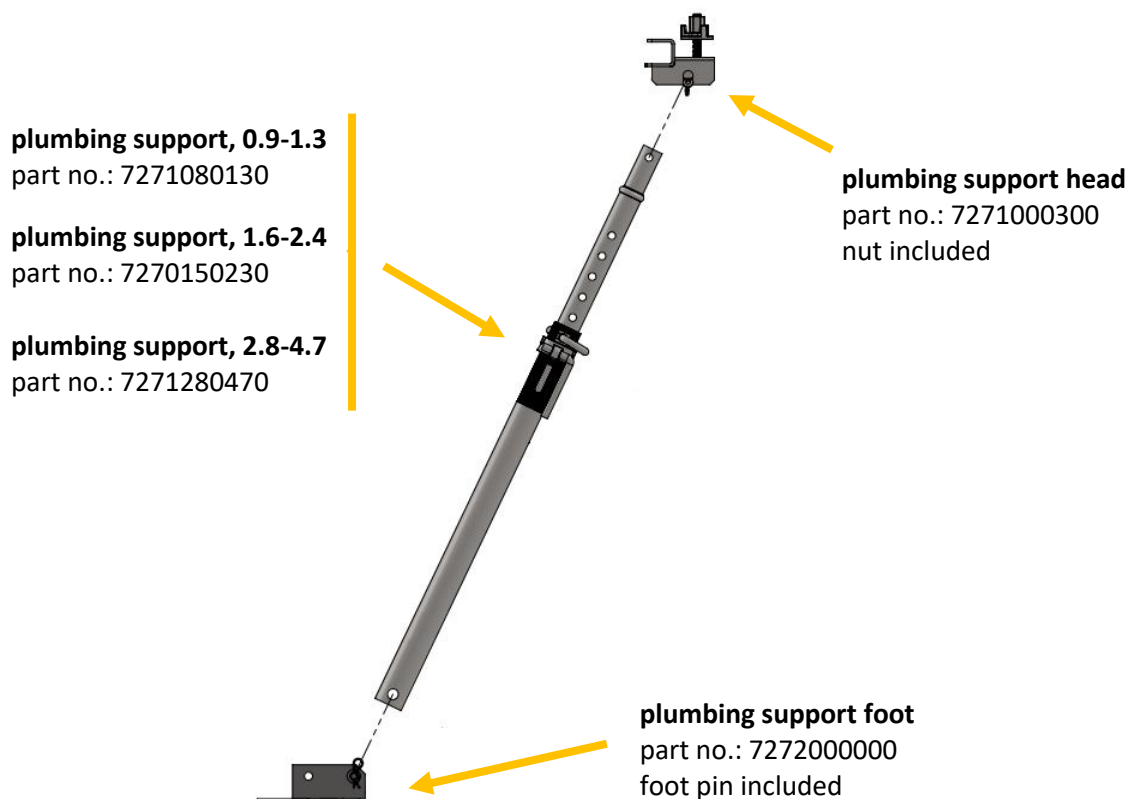
To rectify formwork up to 150 cm in height, it is required to use single 1.5 m plumbing supports. Formwork of up to 300 cm in height should be plumbed with double plumbing supports (1.5 - 3.0). Above this height, one single and one double support should be used for rectification.

### NOTE!

**Plumbing supports are not designed to transfer loads exerted by fresh concrete mix pressure! They are designed only to transfer the load from the weight of its own formwork during its rectification!**

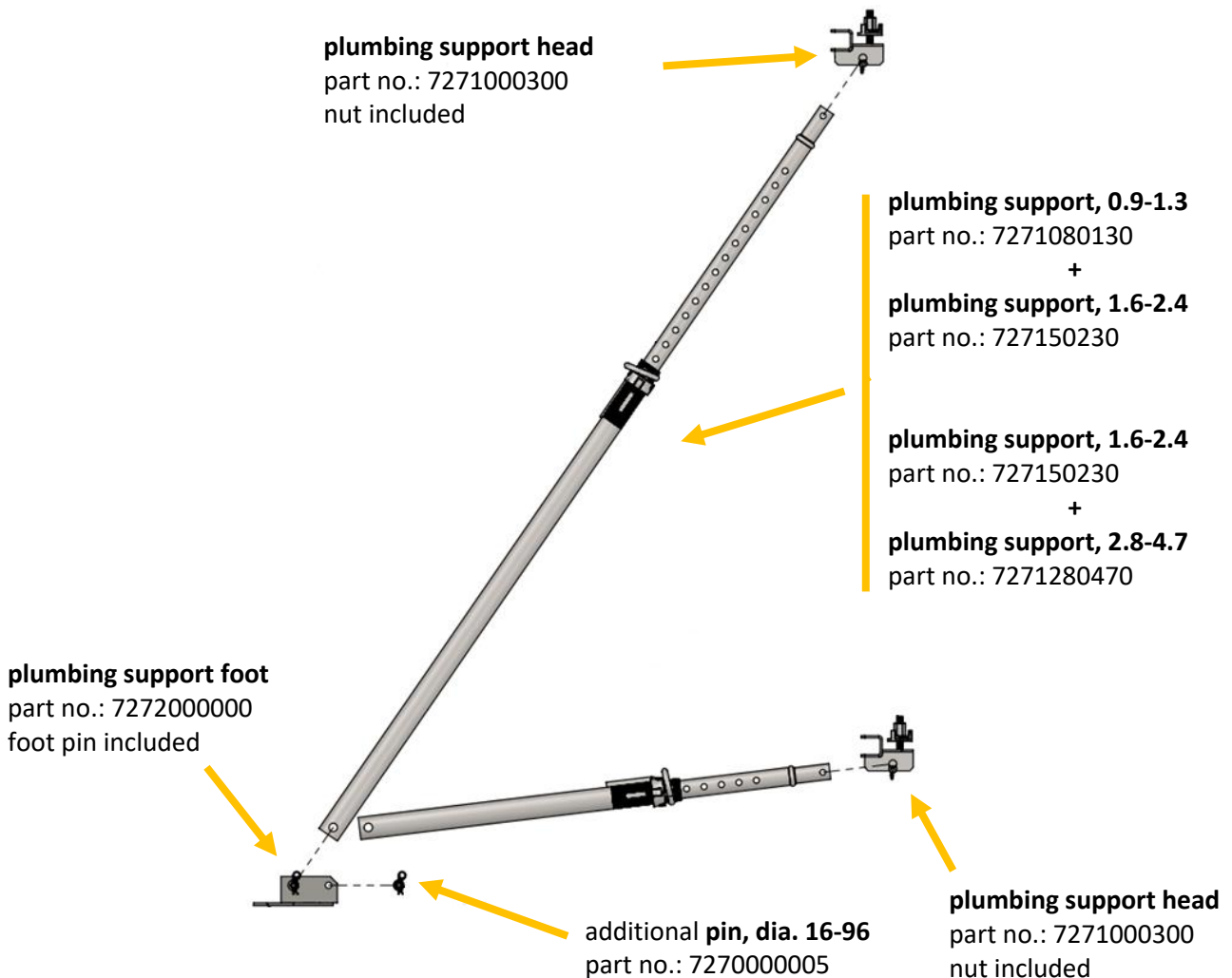
support type	weight	formwork working height
single plumbing support, 1.5 m	12.76 kg	up to 150 cm
single plumbing support, 3.0 m	17.36 kg	up to 300 cm
single plumbing support, 6.0 m	25.36 kg	up to 600cm

Single plumbing support diagram:



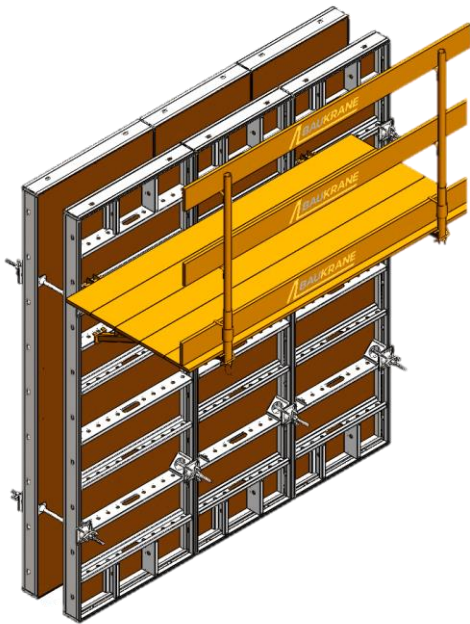
support type	weight	number of items					
		plumbing support head	plumbing support foot	support pin (additional)	single plumbing support, 0.9-1.3	single plumbing support, 1.6-2.4	single plumbing support, 2.8-4.7
plumbing support, 1.5-3.0	27.45 kg	2	1	1	1	1	-
plumbing support, 2.7-6.0	40.05 kg	2	1	1	-	1	1

Double plumbing support diagram:



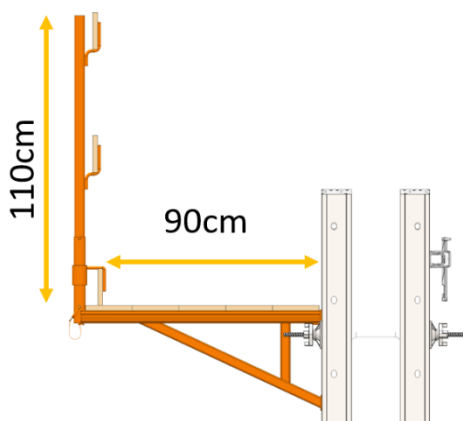


## 10. Working platforms



The working platform design makes it possible to attach it to the internal and external profile. Thanks to this, it is possible to create a working platform on formwork panels operating in horizontal and vertical positions. After installing the support in the vertical profile, secure it against falling out with an integrated pin.

Wooden work landings should be made of seasoned, defect-free, at least 5 cm thick boards. A balustrade is made of seasoned, defect-free boards (thickness at least 3 cm and width at least 20 cm). The toeboard height should be at least 15 cm. Alternatively, the balustrade board dimensions should conform to EN 12811.

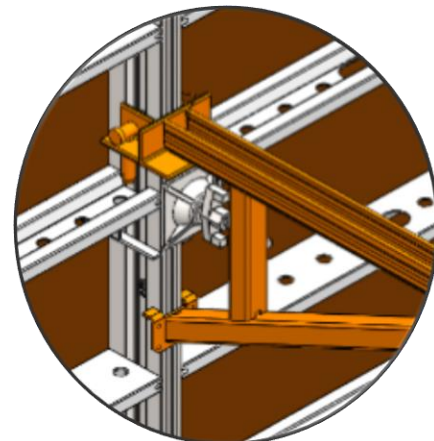
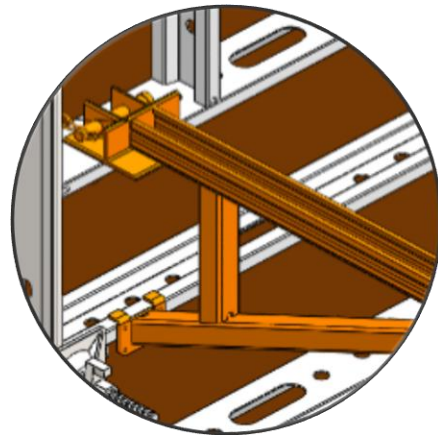


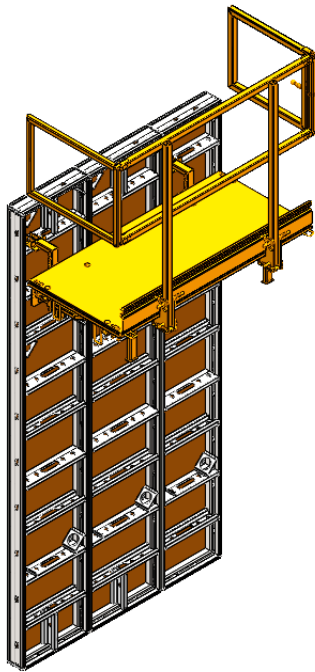
A working platform support is the basic element used to construct 90 cm wide working platforms. When equipped with wooden landings, such a platform makes ensures concreting work safety.

The maximum spacing between platforms should not exceed 2 m.

After fitting a support a post, a platform barrier with a toeboard can be created.

Care should be taken to correctly fix the landing to the support and securely connect the post in the support seat.





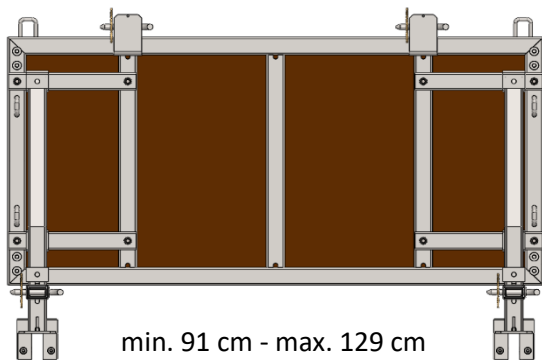
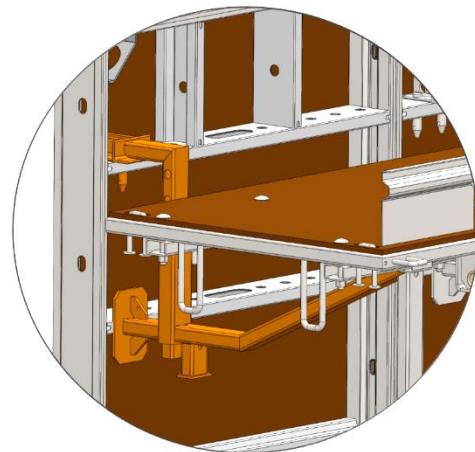
Alternatively, an adjustable working landing (70x145 or 70x238), integrated with a longitudinal barrier and toeboard, can be used. After installing landings in a line and equipping them with fixed or movable landing top barriers, concreting work can be performed safely.

A platform comes with integrated supports with adjustable spacing, allowing it to be used within straight wall formwork, with any panel arrangement. This solution will not be used in the case of curved wall formwork.

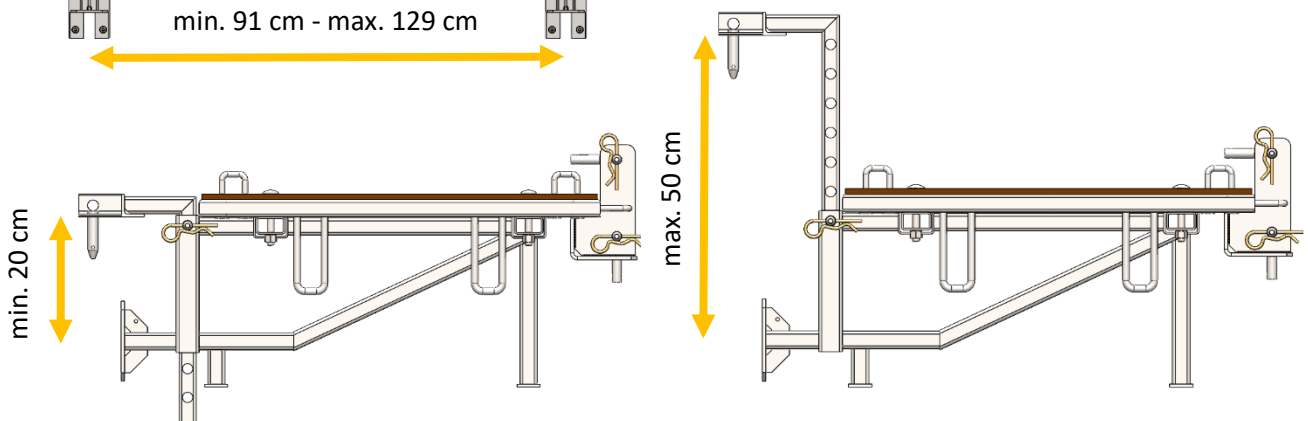
Care should be taken to correctly fix the landing to the support, securely connect the post in the support seat and secure the bolts with cotter pins.

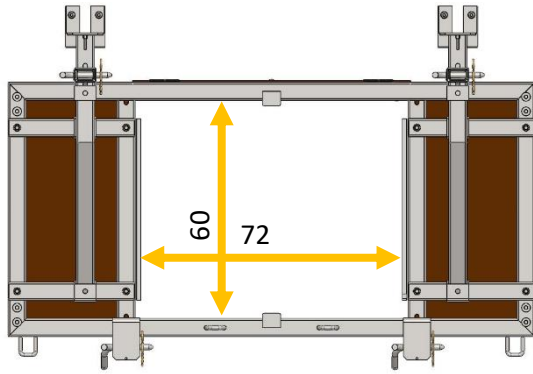
The structure of the 145 working landing facilitates adjusting the spacing of supports in the range from 91 cm to 129 cm. The 238 landing facilitates adjusting the supports in the range from 133 cm to 216 cm. It makes it possible to mount a working platform within straight wall formwork in any panel layout combination.

Depending on the actual needs, it is also possible to adjust the 145 landing suspension height in the range from 20 cm to 50 cm (5 cm increments).



**The permissible landing load is 200 kg/m<sup>2</sup>  
(2.0 kN/m<sup>2</sup>)!**





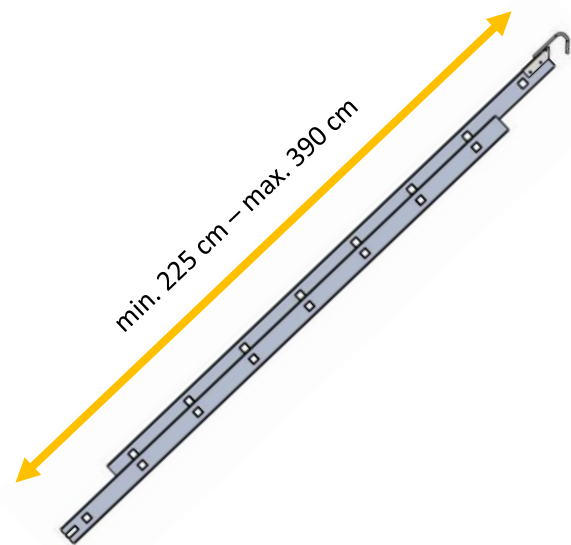
The aluminium telescopic ladder comes with integrated catches, thanks to which it can be suspended in the handles of each type of landings. The adjustment mechanism makes it possible to adjust the ladder length to the level at which the landings have been suspended.

The ladder can be installed on platforms with supports and hatches and landings with or without hatches. In this case, one of the top barriers should be mobile, thanks to which it will be possible to enter the landing safely.

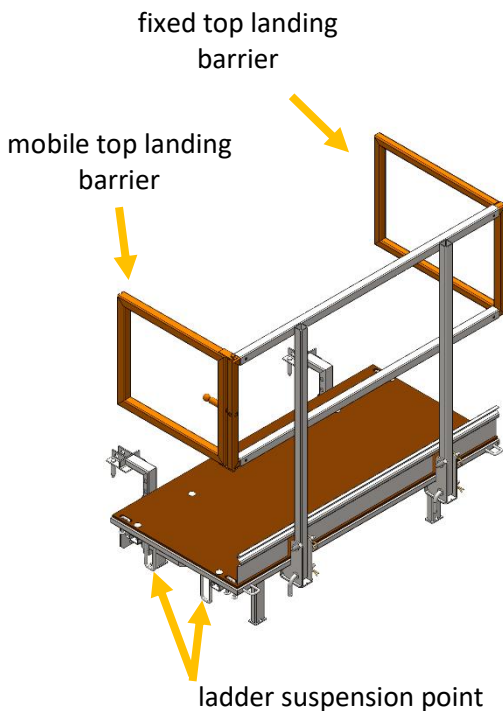
It is not allowed to work on a landing without closed top barriers.

Working surfaces of 70x145 working landing with a hatch and 70x238 working landing with a hatch are equipped with integrated flaps, locked against accidental opening. A wide opening facilitates traffic using a suspended telescopic ladder, especially in limited spaces.

The landing supports equipped with hatches facilitate adjustment in the same range as in the case of landings without hatches.

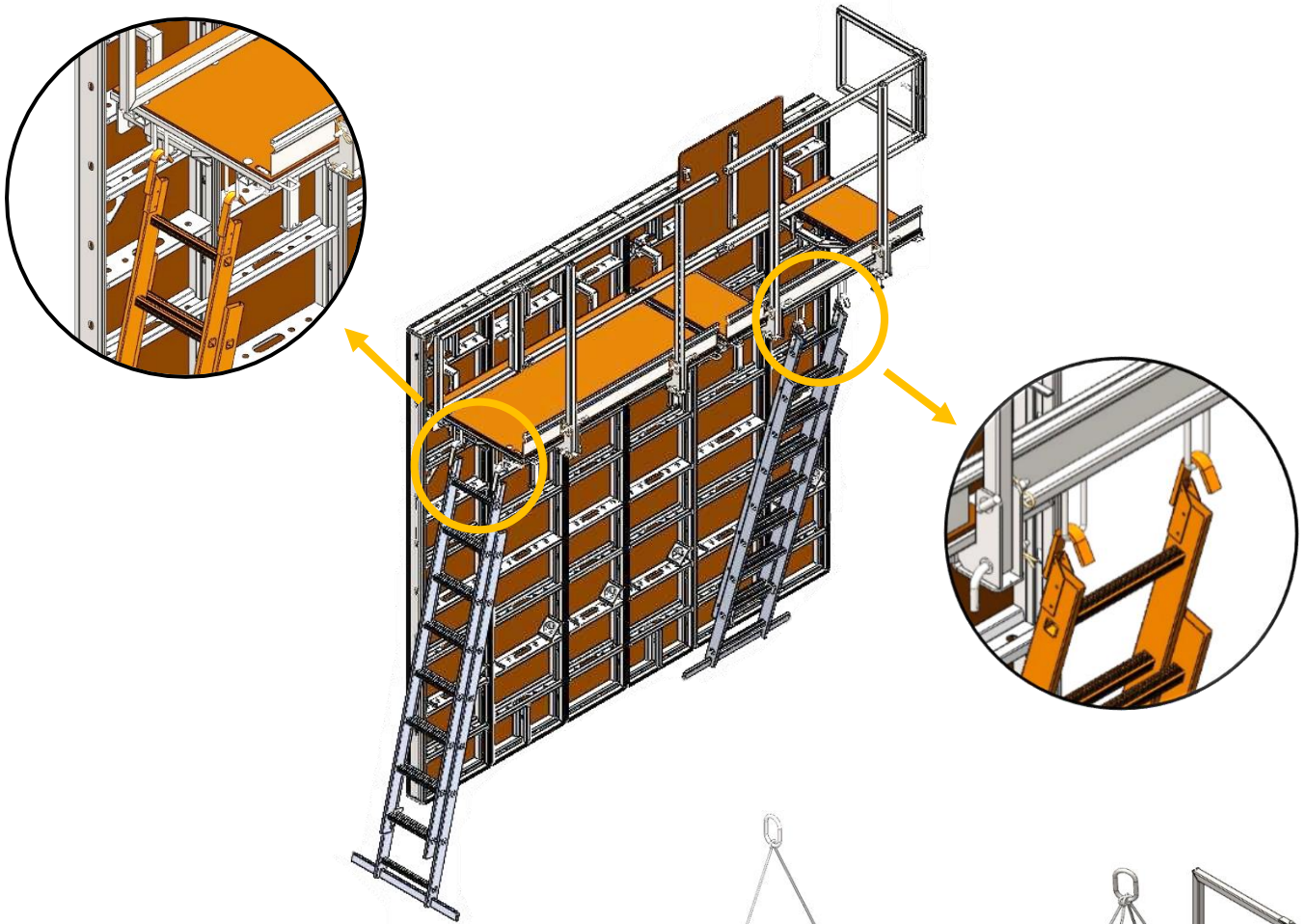


**Only one person can be present on a ladder at one time!**



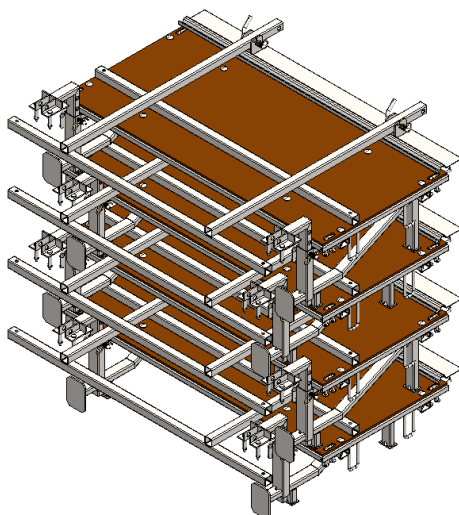
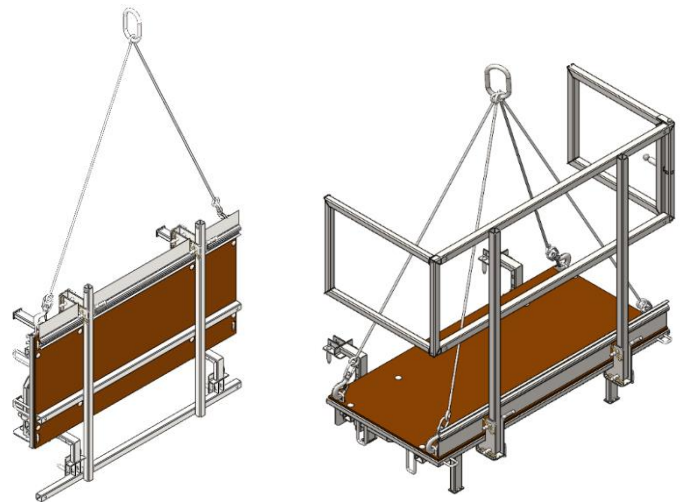
After installing the required number of landings, the ends of the platform should be secured with top barriers, i.e. mobile or fixed, depending on the actual needs. The mobile barrier design allows it to be opened, which facilitates accessing a working landing from a suspended ladder.

The barriers are installed by inserting their ends into the platform balustrade. The barriers are connected with landing elements by means of the attached screws.



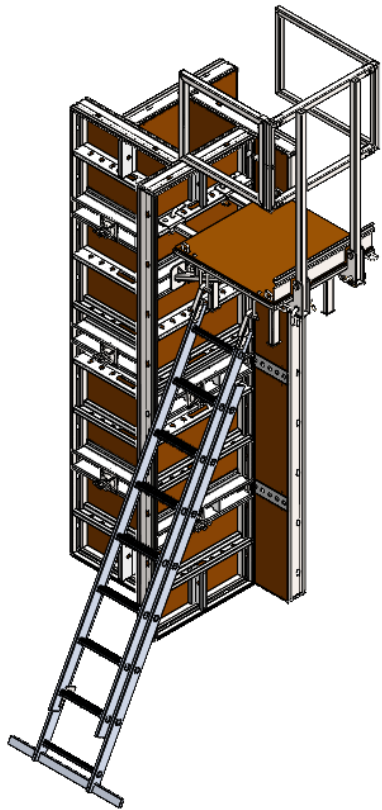
Landings are designed for vertical transport with their barriers folded or unfolded. It is possible to transport single or stacked landings, after securing them with belts.

The suspension point inclination angle should be max. 60°!



Unused landings should be protected against adverse weather conditions. They should be protected with disassembled side barriers and folded balustrade, in stacks of up to four pieces.

Do not use landings with damaged floor sheathing. They should be decommissioned or repaired.

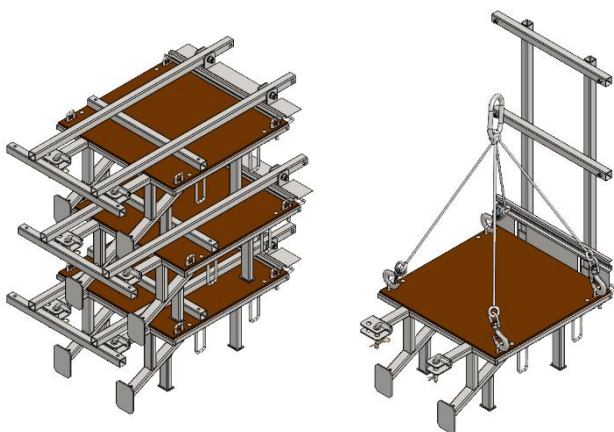
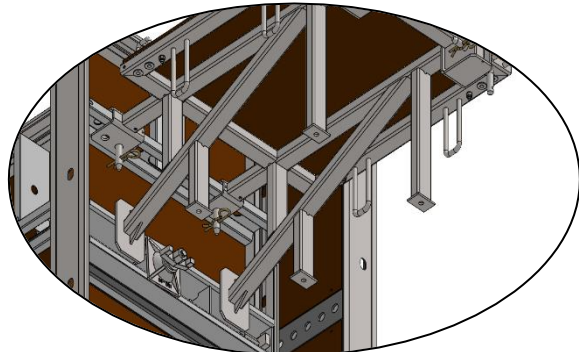
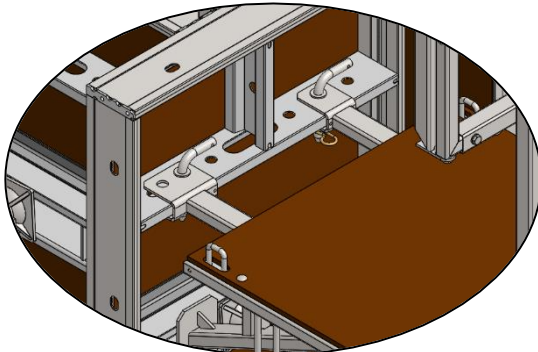


In the case of pillar formwork, a working platform can be created in a traditional manner, i.e. using supports of working landings equipped with posts and supplemented with the floor and barrier made of boards.

Alternatively, a dedicated 70x70 working platform integrated with a longitudinal barrier and toeboards can be installed. After equipping the platform with fixed or mobile top barriers and a ladder, it is possible to perform concreting work safely.

The landing comes with integrated supports allowing its installation within formwork made of 70VZ and 90VZ multi-hole panels. The landing can also be used to supplement a line landings in straight wall formwork.

Ensure correct mounting of the landing in the profile functional sockets, secure locking of bolts in sockets and secure attachment of bolts with cotter pins.



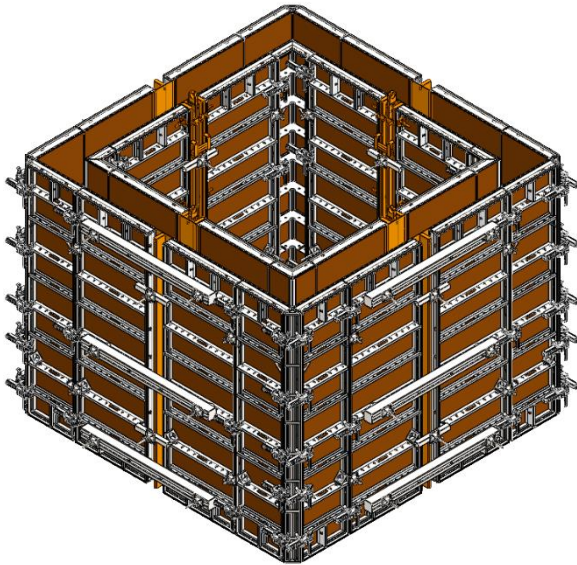
**The permissible landing load is 200 kg/m<sup>2</sup>  
(2.0 kN/m<sup>2</sup>)!**

Landings are designed for vertical transport with their barriers folded or unfolded. It is possible to transport single or stacked landings, after securing them with belts.

The suspension point inclination angle should be max. 60°!

# 11. Forming a lift shaft

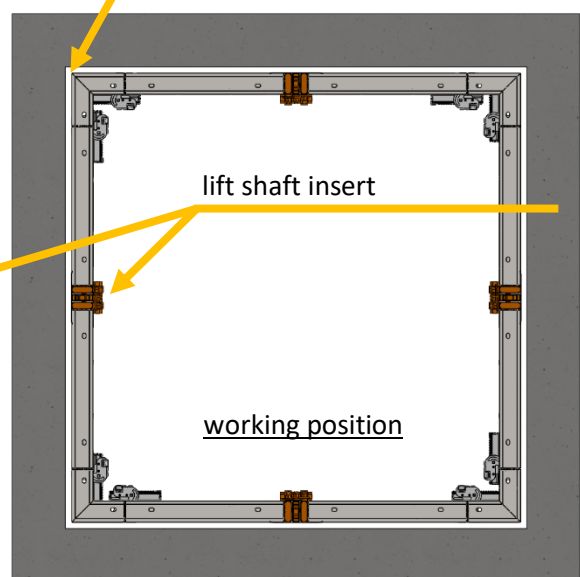
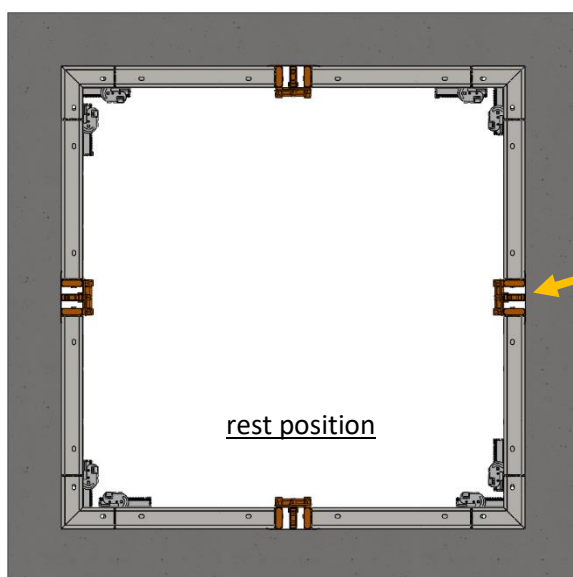
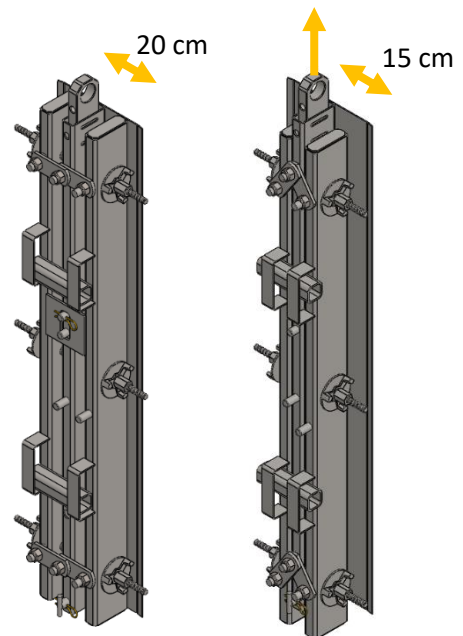
## 11.1. Lift shaft insert



The lift shaft formwork can be constructed using system lift shaft inserts and corresponding supplementary metal sheets. This solution allows the formwork to be moved by means of a crane between the following stages of works, without the need to dismantle its internal part. Thanks to this, high repeatability of the walls constructed is maintained, and the pace of works is accelerated. When planned correctly, it is possible to install the formwork only once.

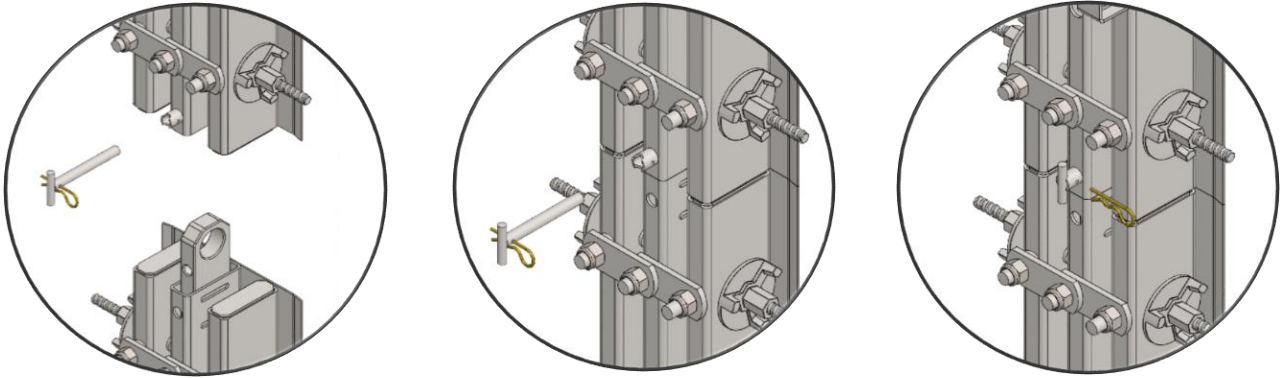
The lift shaft insert design allows to reduce its width by 5 cm after lifting with a crane, which makes it possible, after installation, to move the internal formwork away from each wall by 2.5 cm and safely move the entire set to any construction site area.

Due to the available sizes of Bauframe and Bauframe Alu panels, the minimum internal dimension of the lift shaft is 130 x 130 cm. Do not use more than one insert for each wall.



If it is necessary to construct the top section of the lift shaft formwork, place the inserts directly on each other on required levels, and then connect them with an integrated pin and secure with a cotter pin against unintended falling out.

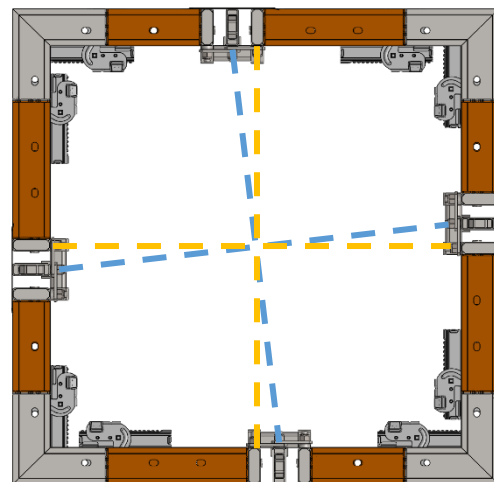
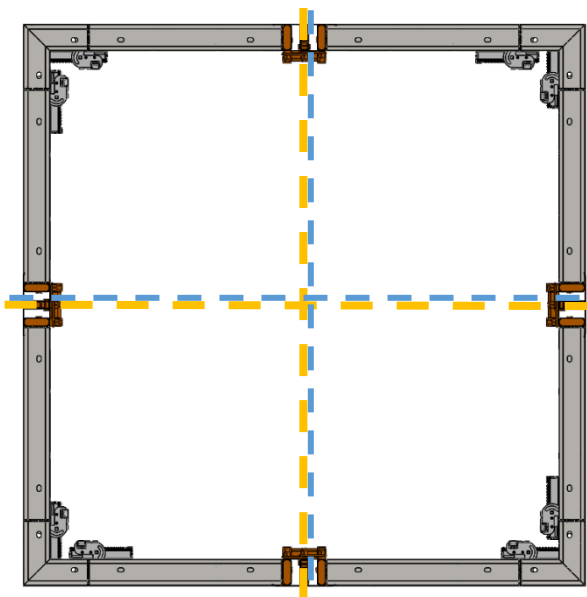
The operation should be performed in the rest position of the insert. Due to the risk of crushing the operator's hands, do not perform any work with the insert in the working position.



### 11.2. Shaft insert installation and disassembly

Start the lift shaft formwork installation from its inner core. The lift shaft inserts are placed between Bauframe or Bauframe Alu panels, one on each wall, if possible in the middle of the wall length. The panel width is selected based on the dimensions of the target element.

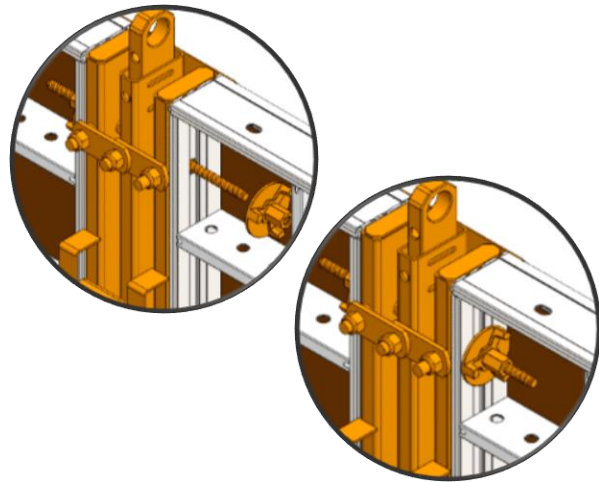
If it is not possible to place inserts in the middle of the wall, they should be assembled in such a way that the points of geometric centres of insert weight and horizontal projection of the internal formwork core are within the horizontal projection, at the same place. This will prevent lateral movement of the inner formwork core during lifting.



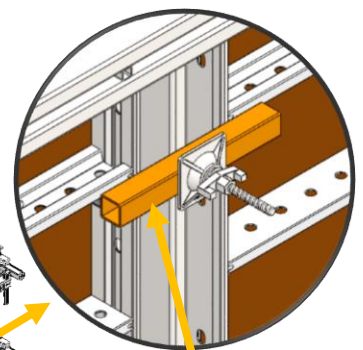
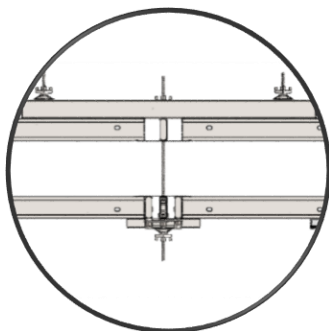
Individual lift shaft formwork elements are connected in a standard way, using wedge locks or centring tie rods. A lift shaft insert is connects to adjacent panels using fragments of tie rods and centring nuts integrated with the insert profiles. Such a layout corresponds to perforations in the side profiles of the panels.

The sheathing metal sheet of the lift shaft insert is located above the sheathing of the adjacent panels and covers the tie rod sockets located in them. In order to ensure connection tightness, it may be necessary to remove the plugs located in the sockets.

If required, the necessary formwork compensating elements should be located at the internal corner.



The external formwork of the lift shaft is installed in the same way, with the only difference consisting in that a supplementary metal sheet must be placed opposite the lift shaft insert. At this stage, it is particularly important to connect elements through a tie rod beam, which guarantees correct adhesion of elements and distribution of stresses to adjacent panels. On the inside and outside of the formwork, it is also recommended to stiffen the formwork with straightening beams. Next, the formwork should be rectified and the required OHS protection measures should be installed.

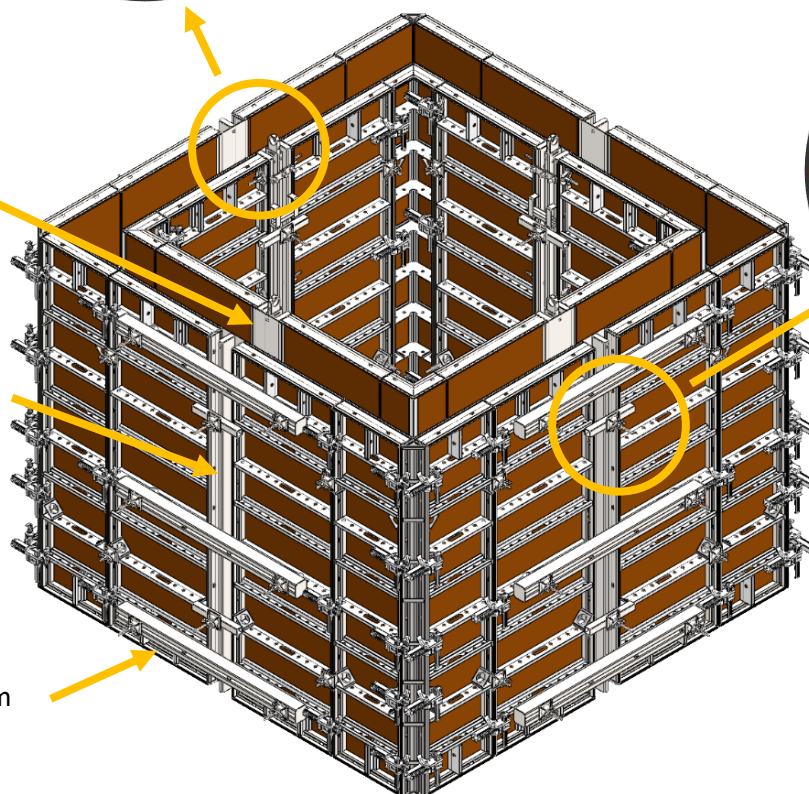


lift shaft insert

supplementary metal sheet

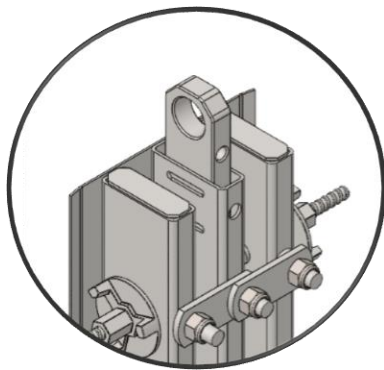
stiffening beam

tie rod beam





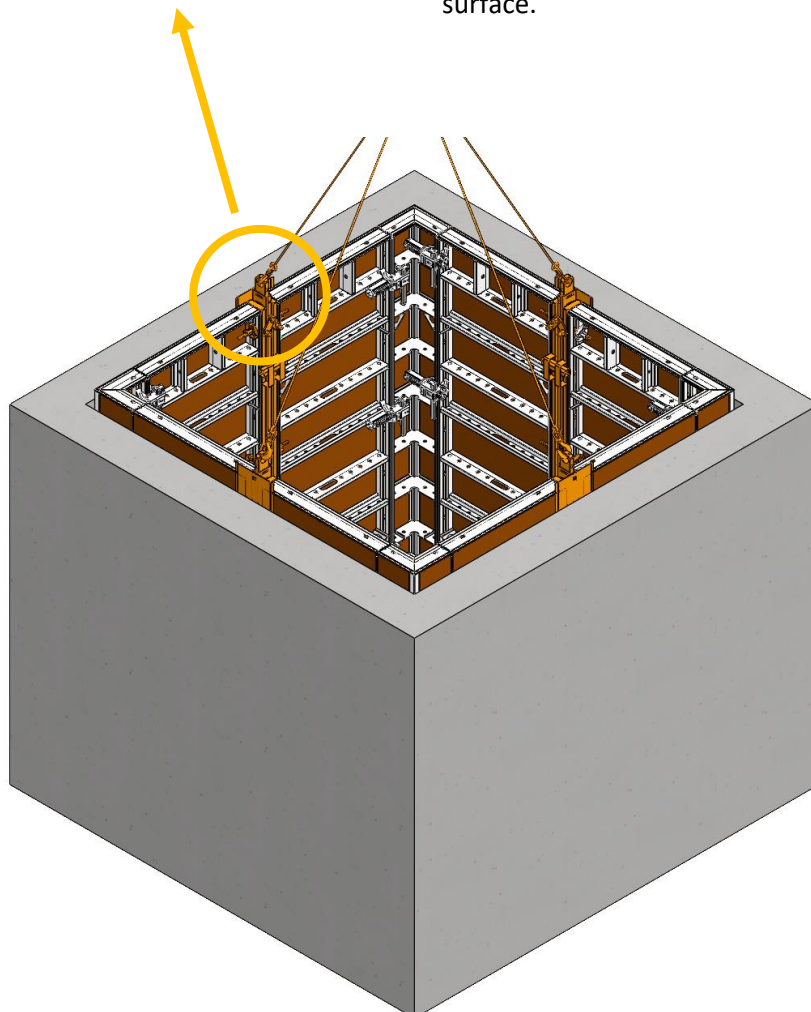
Before removing the internal lift shaft formwork core, remove the working landings, as well as all tie rods and straightening beams. They prevent the correct functioning of the formwork dimension reducing mechanism. However, do not remove any locks or other fasteners that tie individual internal formwork elements!



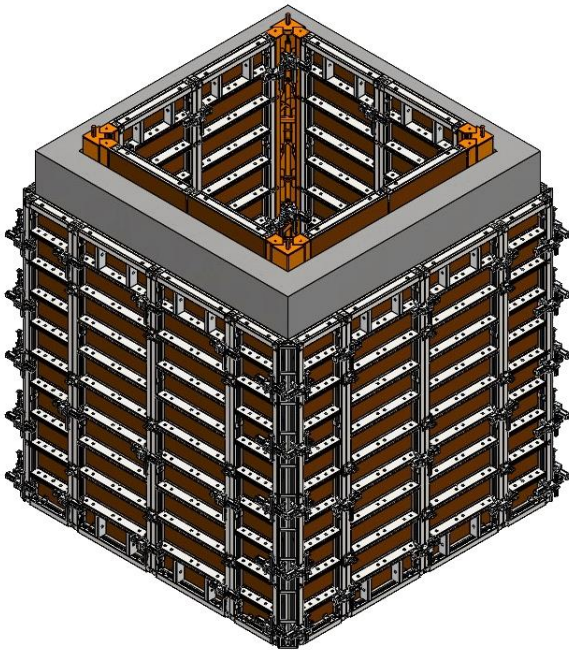
The formwork is dismantled using a crane whose slings must be attached to the lift shaft insert fixtures. Taking into account the dimensions of the formwork projection, it is recommended that only long slings should be used to ensure a correct inclination angle of each tension member.

Lifting the insert holders activates a mechanism that will move the formwork away from each wall by 2.5 cm, which facilitates removal of a segment from the working zone. Do not transport the lift shaft formwork in a way different than using dedicated fixtures placed in inserts! External formwork, connected into segments, can be transported like any other set, using the Bauframe transport fixture. See section 13 for details of this operation.

Before starting work, the formwork surface must be covered thoroughly with an anti-adhesive fluid. This will facilitate the subsequent removal of formwork from the wall surface.



### 11.3. Lift shaft corner



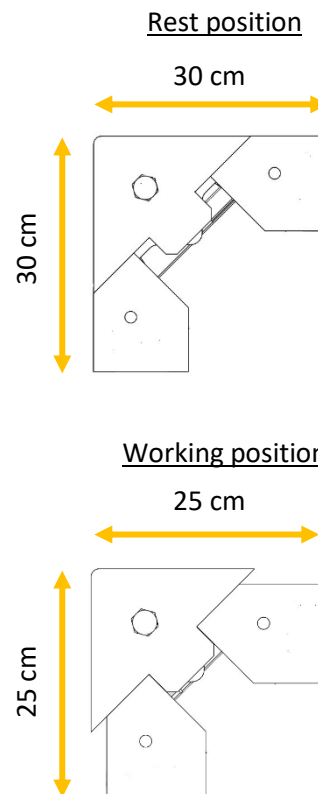
The lift shaft formwork can be constructed using a lift shaft system corner (30x300). Its design facilitates moving the internal formwork away from a concreted wall and transporting it with a crane between the next works stages without the need to remove its internal part. Thanks to this, high repeatability of the walls constructed is maintained, and the pace of works is accelerated. When planned correctly, it is possible to install the internal formwork only once.

The lift shaft corner design allows to reduce its width by 5 cm after lifting with a crane, which makes it possible, after installation, to move the internal formwork away from each wall by 2.5 cm and safely move the entire set to any construction site area.

The corner mechanism is operated from the top, without using any additional tools. Such tools as a ratchet wrench, short tie rod or rod with a suitable diameter are sufficient to trigger the corner mechanism.

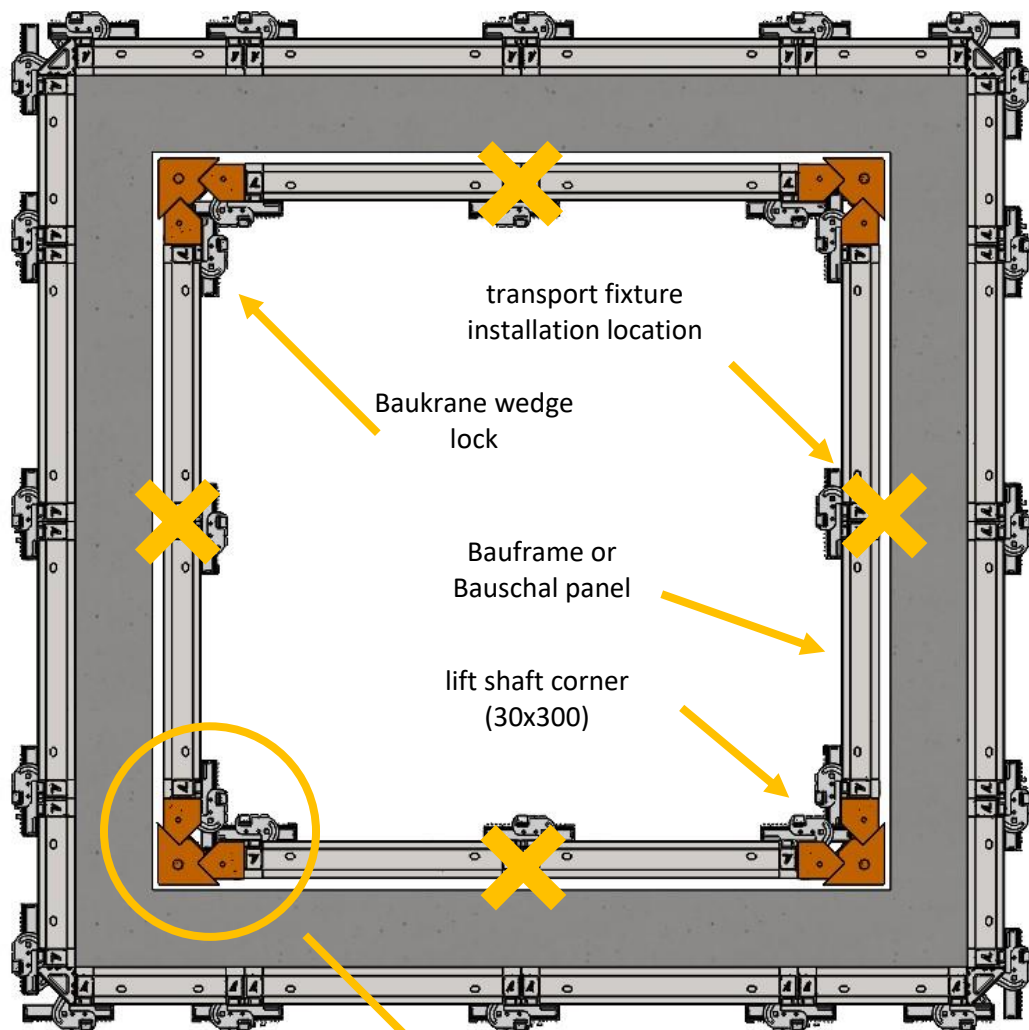
After opening the internal formwork, the element is lifted using four Bauframe transport fixtures. If Bauschal panels are present in the formwork, the Baukrane transport fixture should be used.

Transport fixtures should be placed in the middle of the width of each wall.



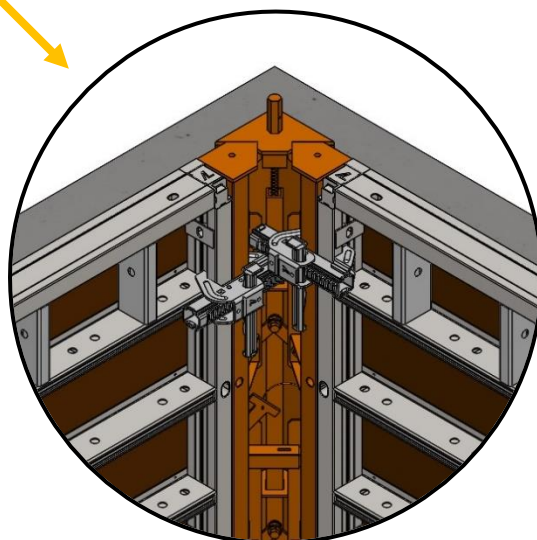
**The maximum surface area of internal formwork being moved is 40m<sup>2</sup>!**

**NOTE! When using transport fixtures during operation, it is absolutely necessary to act in line with the instructions provided in their operating manual!**



The corner is connected to the panels by means of Baukrane wedge locks. The UNI wedge locks should not be used for this purpose.

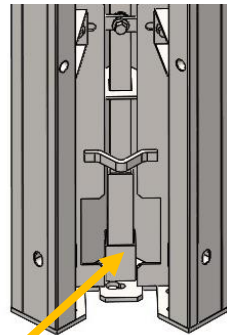
Individual lift shaft corners are transported by means of transport belts with correct load capacity, routed through transport lugs located in the corner.



## 11.4. Shaft corner stacking

Before stacking the lift shaft corners on top of each other, make sure that both corners are in the same working position, i.e. in the rest or working position.

1. Remove the spring cotter pin from the LOWER corner and turn the locknut (1) downwards, i.e. towards the locknut (2). Unscrew until both locknuts come into contact with each other.



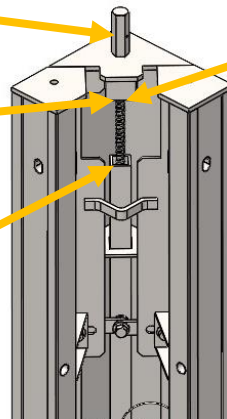
2.

adjustment  
screws

locknut 1

locknut 2

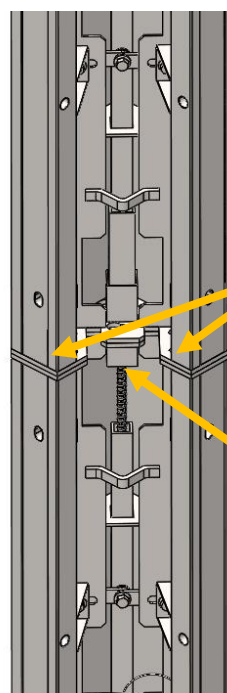
spring cotter pin



2. After unscrewing the locknut (1) down as much as possible, i.e. until it touches the locknut (2), insert the spring cotter pin in the hole located directly above the locknut (1).

3.

3. Place the UPPER corner on top of the LOWER one. The mechanism is connected by screwing an M16x60 screw (class 8.8) into the adjustment screws hole of both corners.



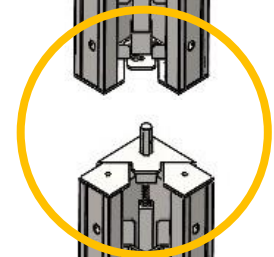
M16x35 screws,  
class 8.8, with nuts

M16x60 screw,  
class 8.8

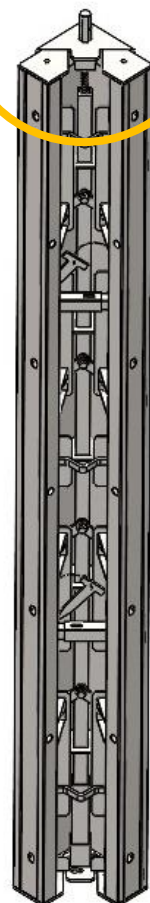
4. Screw the LOWER and UPPER corner leaves together with the M16x35 screws (class 8.8).



UPPER corner



LOWER corner



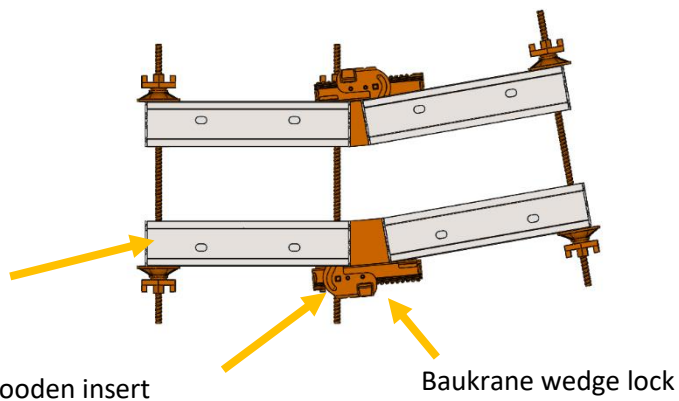
## 12. Arc-shaped walls

### 12.1. Wedge inserts



Bauframe or Bauframe-Alu panel

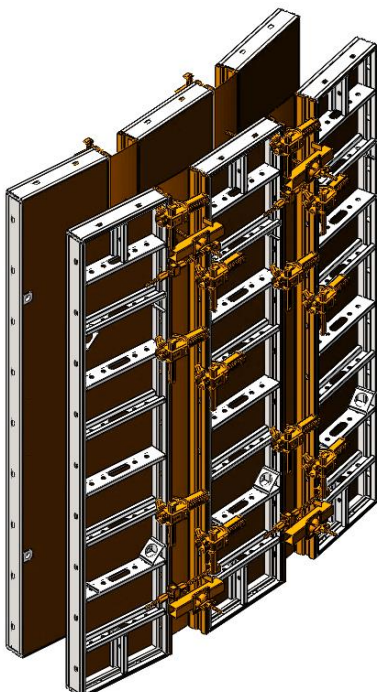
One method of constructing arc-shaped walls consists in placing correctly cut wooden inserts between standard Bauframe and Bauframe Alu panels. Their individually selected trapezoid shape creates formwork offsets approximating the obtained partition shape to the designed arc shape. The inserts and panels are connected using wedge locks. If, on the inside of the formwork, the panels are narrower than the outer panels, the formwork must be tightened through wooden inserts.



trapezoidal wooden insert

Baukrane wedge lock

### 12.2. Radial inserts

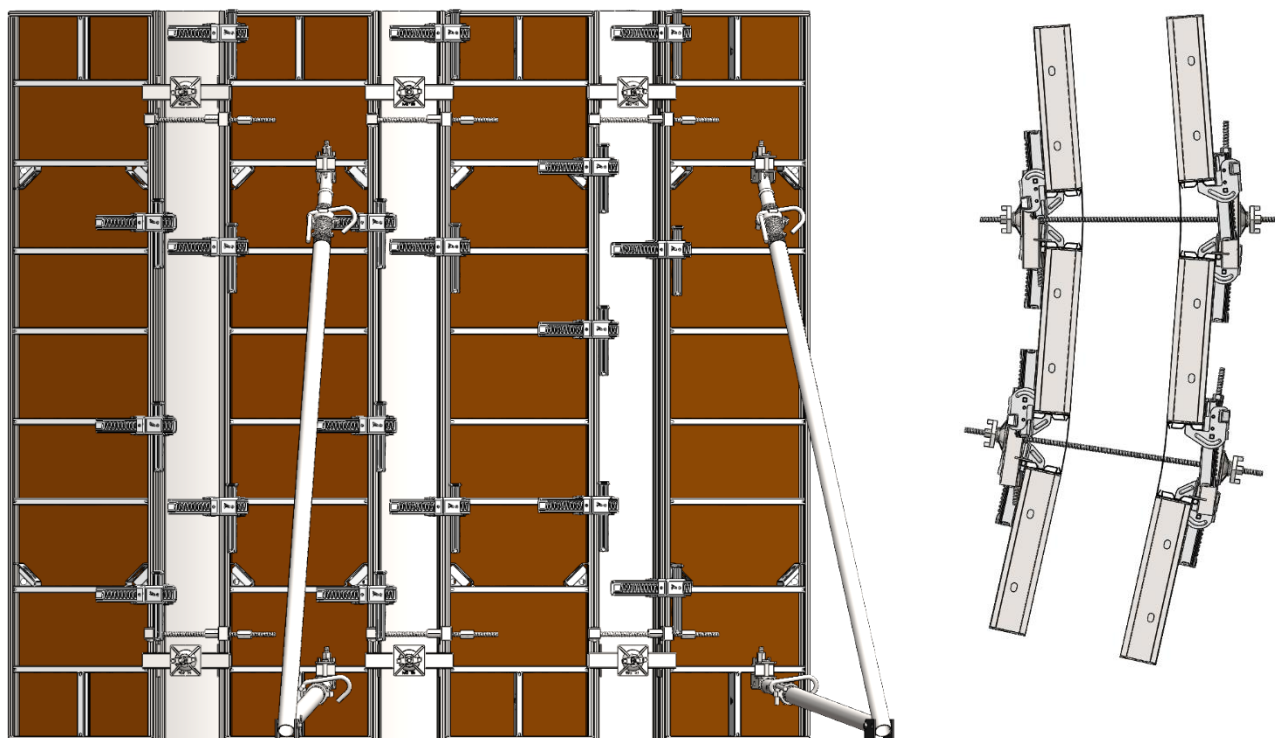
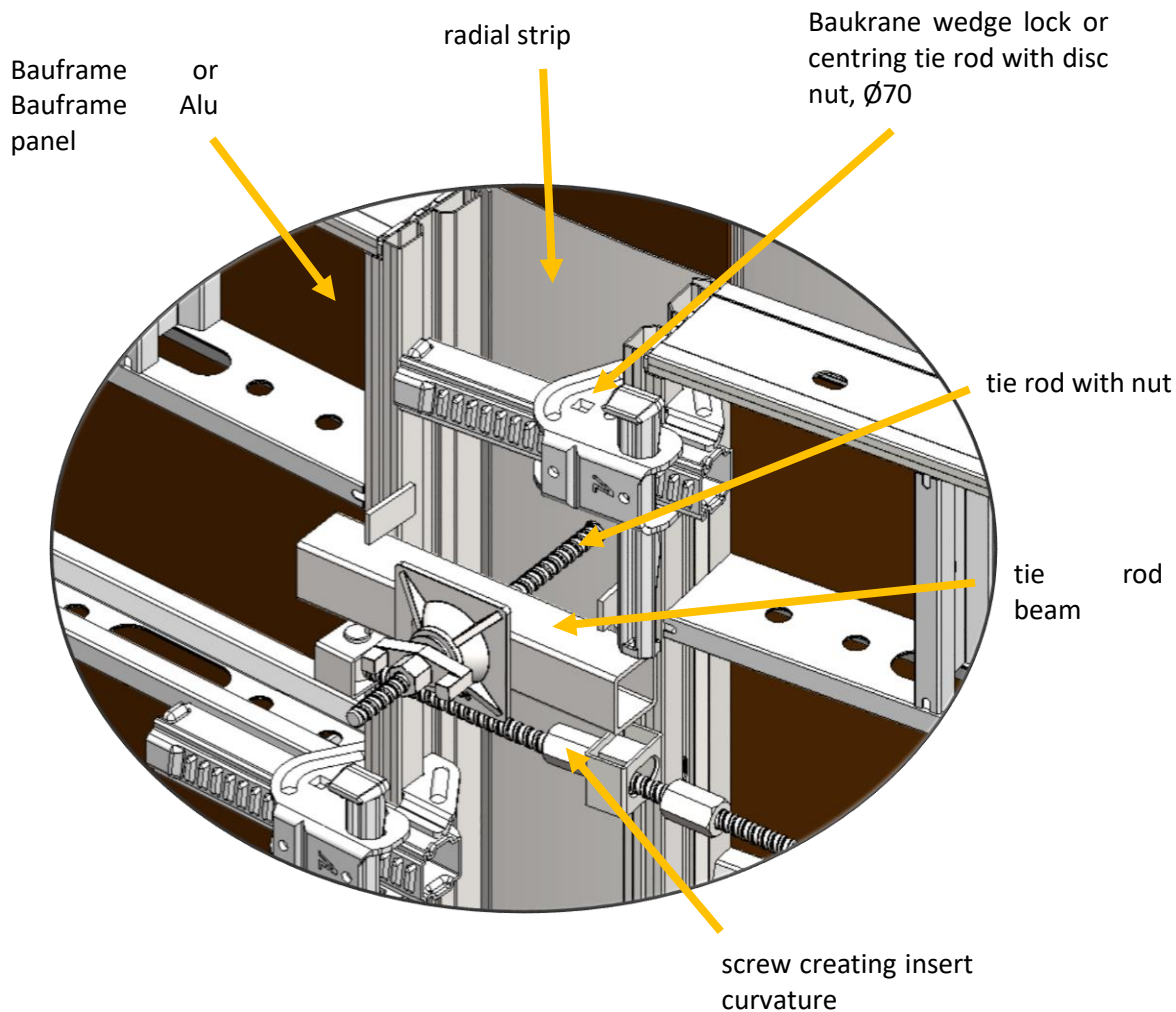


System radial inserts can be used as an alternative to labour-intensive wooden inserts. They can be 15 cm, 20 cm and 25 cm wide.

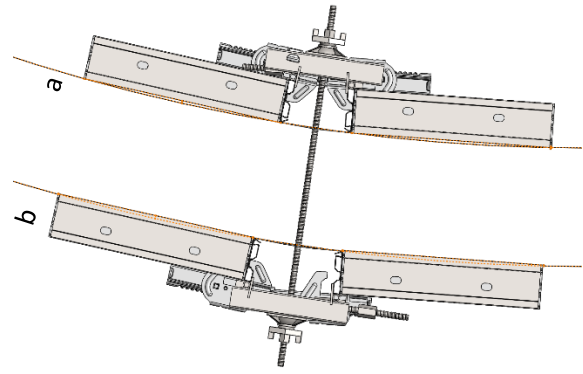
Radial inserts are connected to the formwork by means of standard wedge locks or centring tie rods. The tie rods should be passed through the system pass-through in the inserts, and the articulated nuts should be rested on the tie rod beams.

The required formwork curve is obtained by adjusting hexagon nuts.

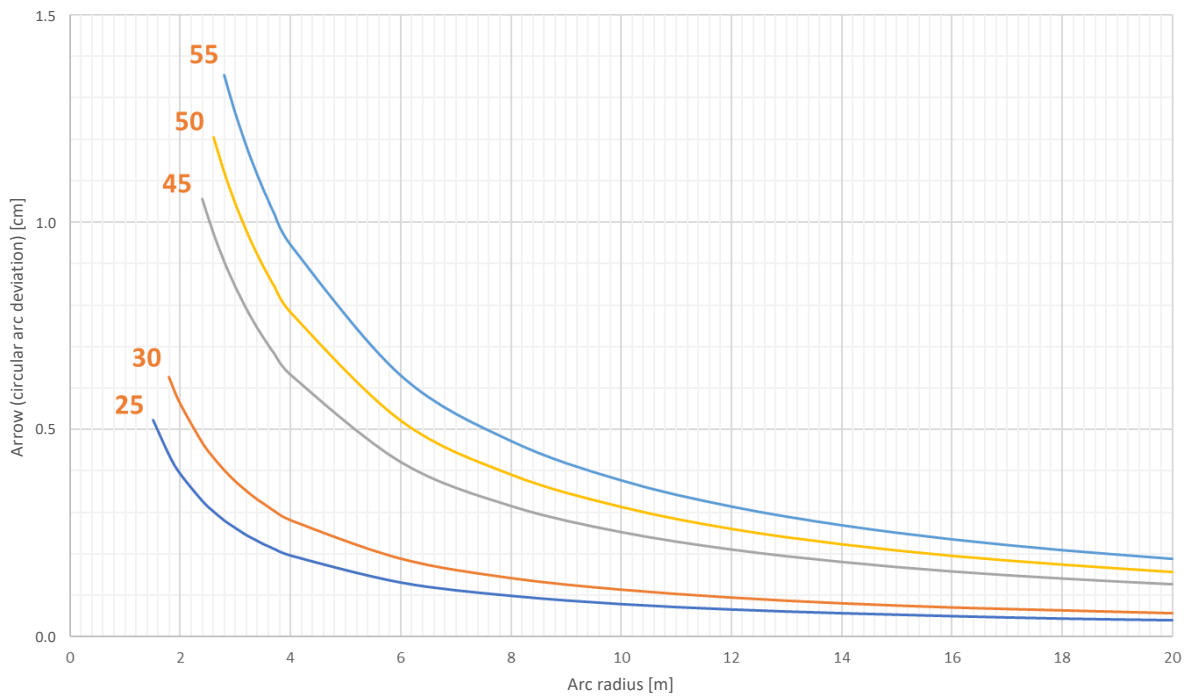
It is not allowed to connect radial inserts directly with each other!



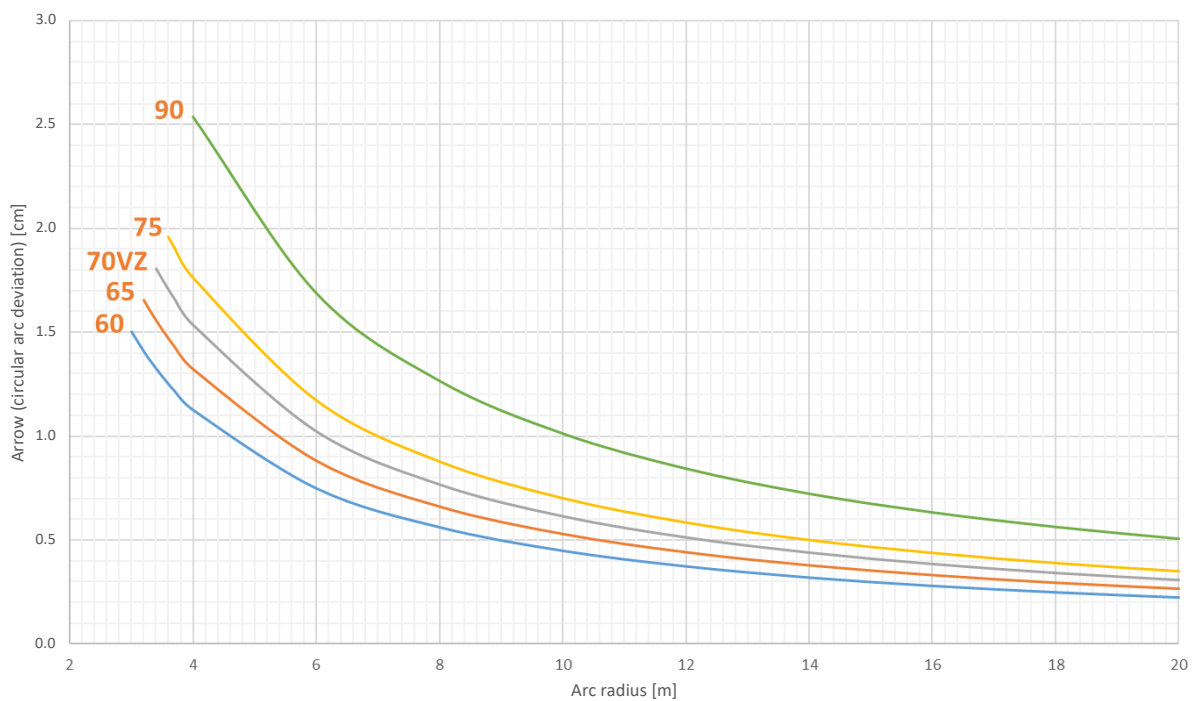
Depending on the used width and arc radius, formwork with different deviation from the ideal arc can be obtained. In order to determine the most optimal element to be used for formwork construction, the following nomographs can be used (when a permissible deviation is known).



Radial-arrow diagram - 25 cm - 55 cm wide panels

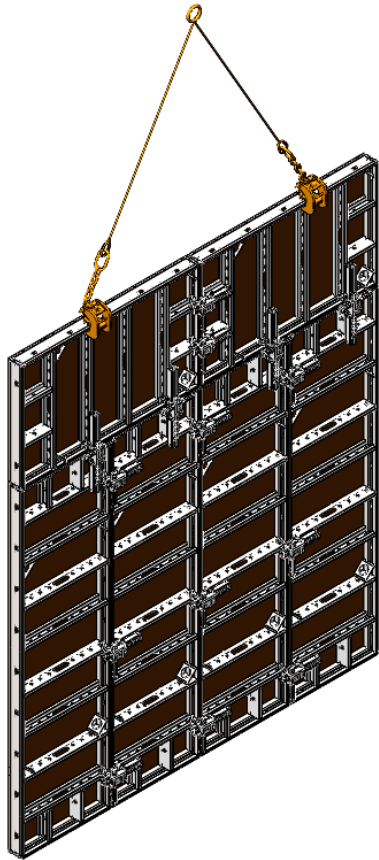


Radial-arrow diagram - 60 cm - 90 cm wide panels



## 13. Formwork transport

### 13.1. Bauframe transport fixture



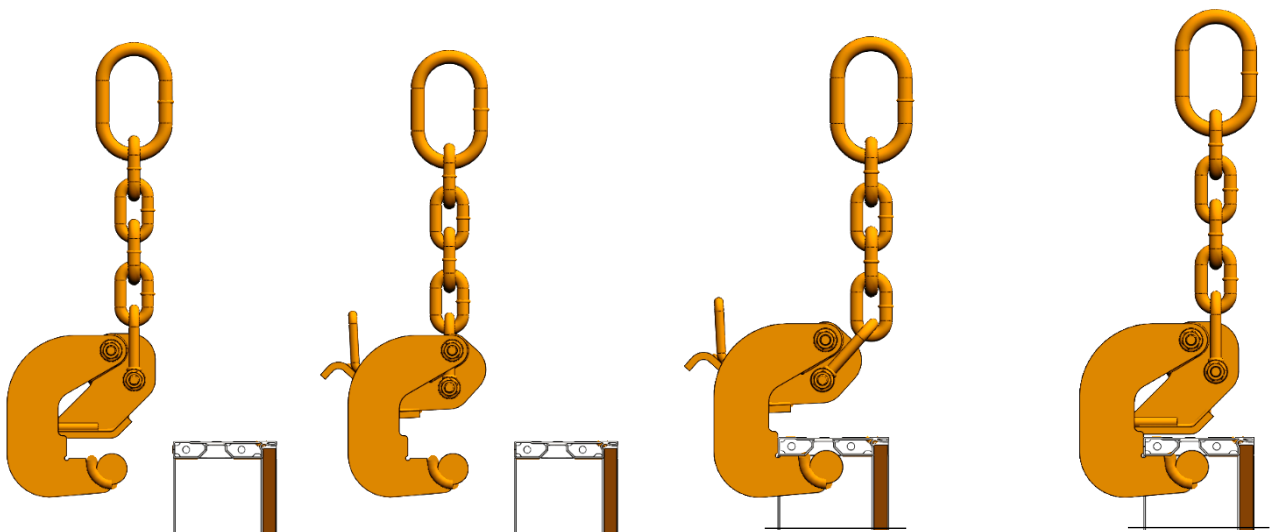
Using a dedicated Bauframe transport fixture is the only safe way to handle Bauframe and Bauframe Alu system panels. It facilitates handling individual panels or panel sets.



**The permissible working load of the Bauframe transport fixture is 12 kN (1200 kg).**

The Bauframe transport fixture is designed to handle Bauframe and Bauframe Alu formwork panels. Do not use this fixture to handle other system panels.

Installation of Bauframe transport fixture for Bauframe panels:



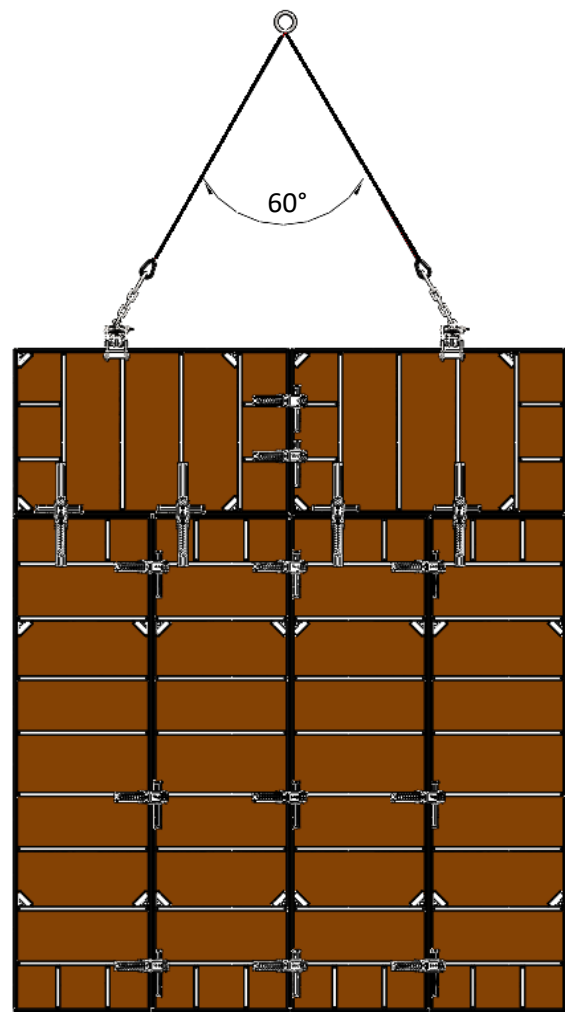


Installation of Bauframe transport fixture for Bauframe Alu panels:

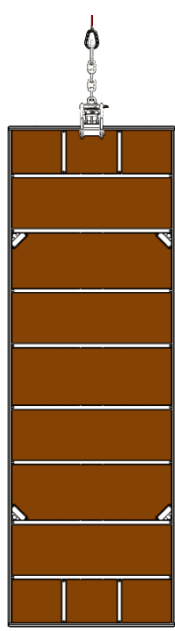


A single fixture can only be used to carry individual elements, up to a width of 90 cm. It must be suspended as close as possible to the vertical axis of symmetry. Otherwise, uncontrolled lateral movement of the element being lifted may occur.

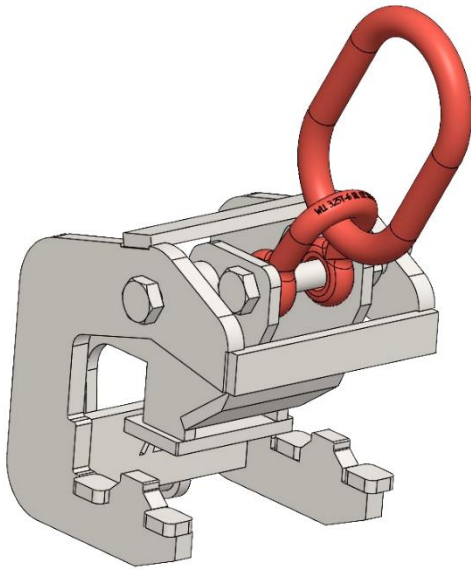
When using two fixtures simultaneously, ensure that the angle between the slings is close to 60°. The sling length should be adjusted to the size of the lifted set.



max. 6 running metres



## 13.2. Baukrane transport fixture

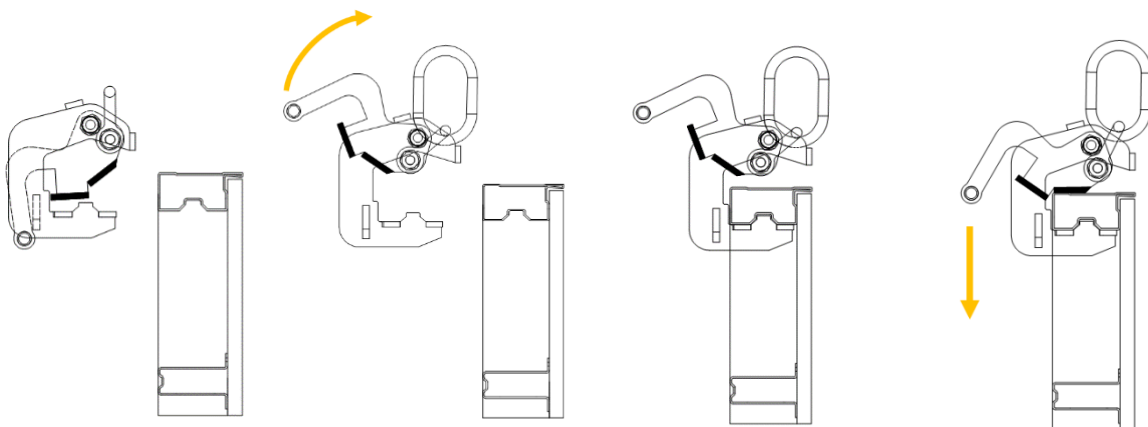


If Bauframe and Bauschal panels are used simultaneously in the formwork, a dedicated Baukrane transport fixture must be used. Its design, including a double hold-down, allows it to be used both for Bauframe panels with thinner profiles, and Bauschal panels with a thicker profile. It eliminates the need to have two sets of transport fixtures on the construction site.

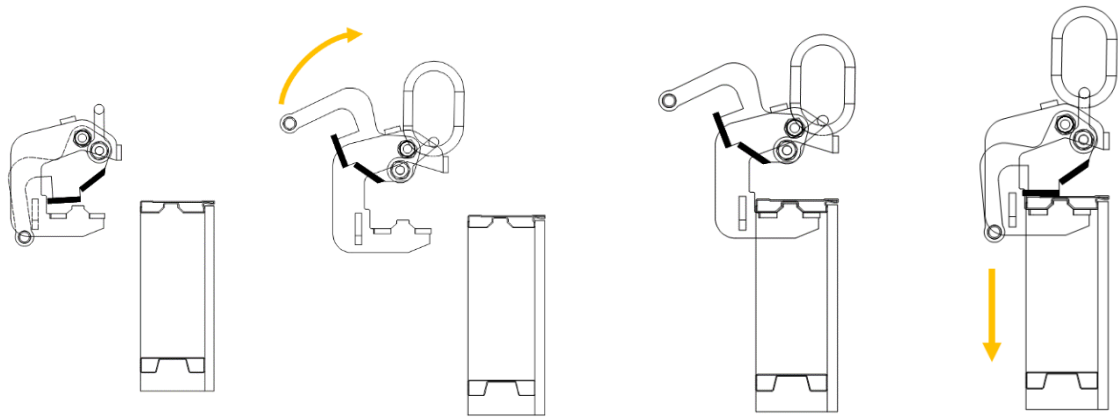
The Baukrane transport fixture is designed to handle Bauframe, Bauframe Alu and Bauschal formwork panels. Do not use this fixture to handle other system panels.

**The permissible working load of the Baukrane transport fixture is 12 kN (1200 kg).**

Installation of Baukrane transport fixture for Bauschal panels:

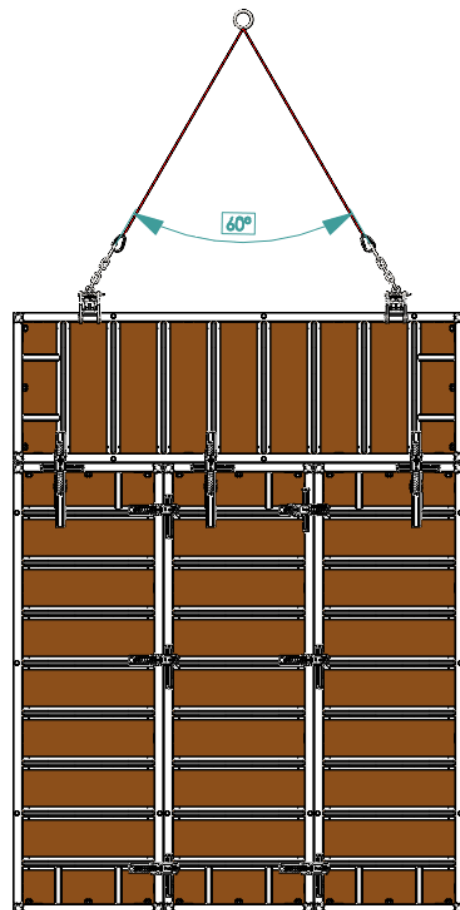


Installation of Baukrane transport fixture for Bauframe and Bauframe Alu panels:



A single fixture can only be used to carry individual elements, up to a width of 90 cm. It must be suspended it as close as possible to the vertical axis of symmetry. Otherwise, uncontrolled lateral movement of the element being lifted may occur.

When using two fixtures simultaneously, ensure that the angle between the slings is close to 60°. The sling length and load capacity should be adjusted to the size of the lifted set.



max. 6 running metres



**Before lifting the load, check if the frame  
hold-down is located correctly!**

**Follow the instructions provided in the  
transport fixture operating manual!**

**NOTE!**

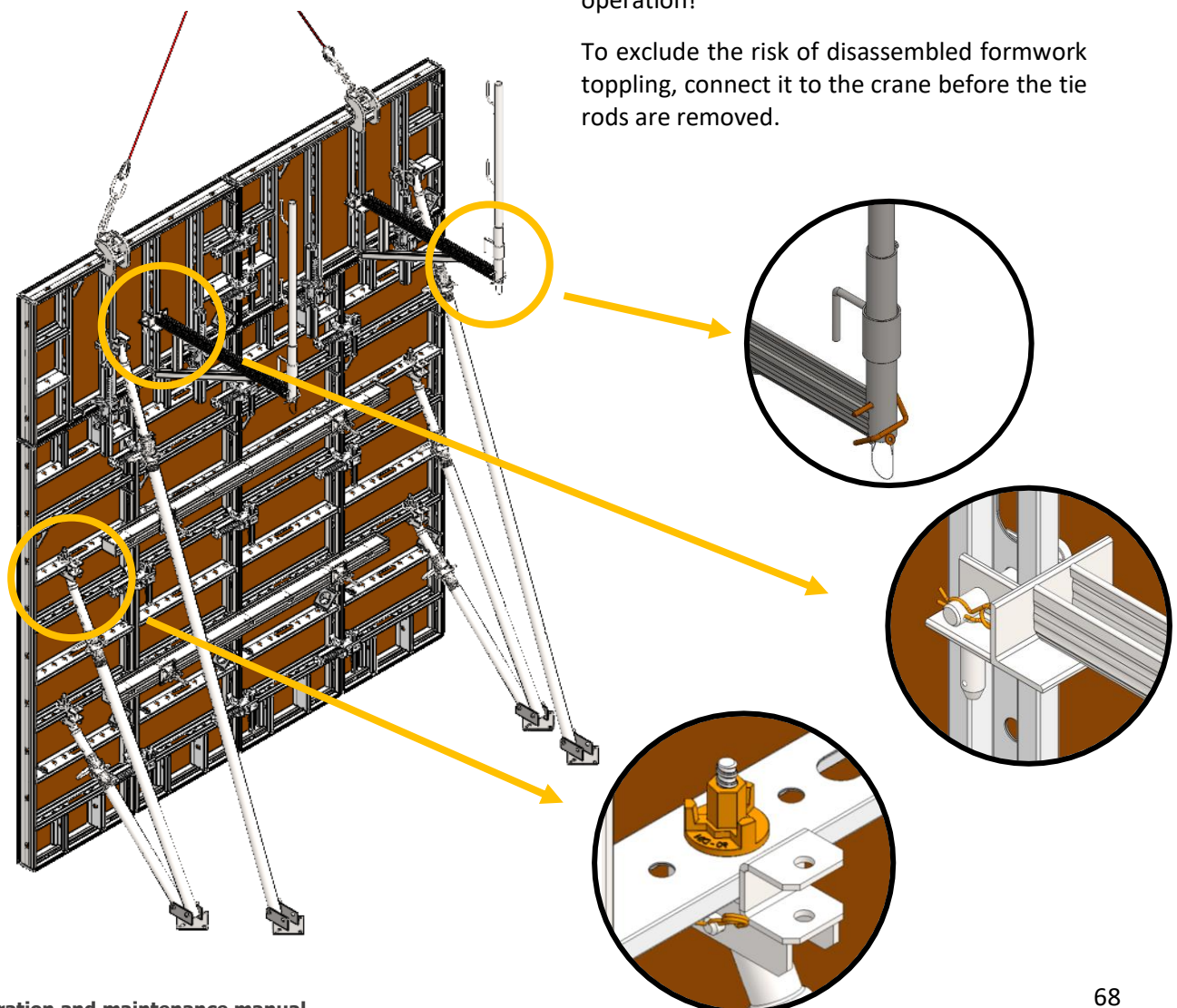
**Do not use transport fixtures to remove formwork from concrete! This may lead to crane overload and formwork panel damage.**

**Use wooden wedges to remove the formwork. Lifting individual formwork panels or their sets is possible only after full detachment of formwork from a concrete surface!**

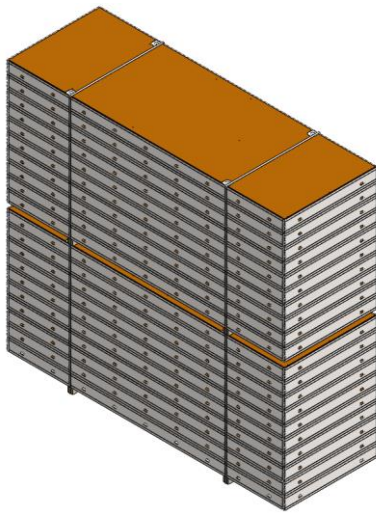
Using two transport fixtures facilitates handling formwork panel sets. Not more than 6 running metres of formwork can be lifted at one time, while observing the load capacity of the fixture, slings used and the permissible load capacity of the crane.

Before lifting a formwork panel set together with the accessories, it is absolutely necessary to remove the tie rods with nuts and other free elements, and make sure that all cotter pins and nuts present in the accessories are installed as required. If it is not possible to protect the accessories from falling out, it must be removed before starting the lifting operation!

To exclude the risk of disassembled formwork toppling, connect it to the crane before the tie rods are removed.



## 13.2. Storage and transport



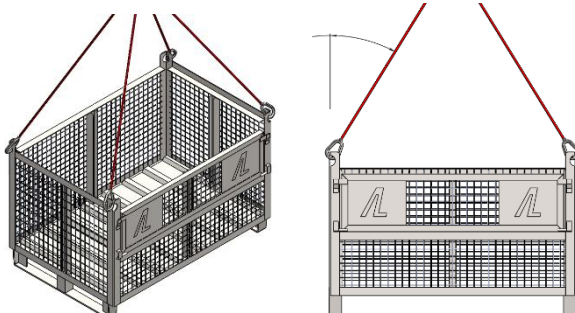
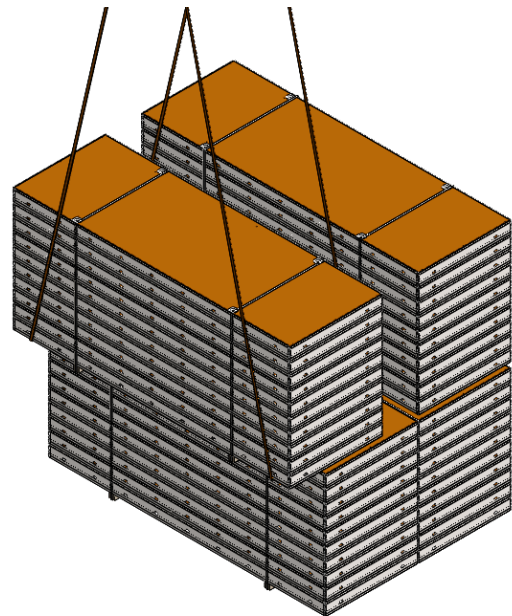
Before stacking the panels, lay wooden joists (height at least 8 cm) on a flat surface. This will facilitate later horizontal or vertical transport of a panel package.

Stack maximum 10 panels on top of one another. If it is necessary to store panels of different width and height, make sure that the largest elements on the bottom of a stack. It is not allowed to use more than one panel as the lowest layer in the package! Each panel package must be secured with a tape. Do not stack more than 3 packages at the same time.

During handling operations, panel packages should be tied at all times. Do not transport more than one package at one time. For this purpose, certified transport belts with correct load capacity should be used.

Always remember that the bottom package layer must consist of only one element. Packages should consist of elements of the same width. If it is necessary to move a package containing elements of different width, ensure that panels with width of at least half the width of the widest element in the package are located on the top of a package.

This method cannot be used for packages in which the edge of any of the elements is not covered with a belt!



Formwork equipment should be stored in specially designed transport bins. They allow not only to maintain proper order on the construction site, but also facilitate safe vertical and horizontal load handling.

It is permitted to transport only single transport bins whose side walls are closed.

The maximum sling inclination angle should be 30°!

## 14. Cleaning

Applying a uniform layer of anti-adhesive agent on a plywood surface before concreting effectively facilitates formwork disassembly processes and its subsequent removal of concrete residues.

Immediately after concreting, remove concrete residues from the outside of the formwork with water.

Immediately after disassembly, clean the formwork surface using a pressure washer and scraper. Particular care should be taken near silicone joints. They are

sensitive to this method of cleaning and may be damaged by a pressurised water jet applied for an excessive period of time.

In order to remove harder concrete residues, a putty knife should be used. Do not clean the formwork with sharp and pointed objects, wire brushes, as well as rotating discs or grinding brushes. Each use of the above-mentioned objects may cause permanent damage to the sheathing and galvanised anti-corrosion coating protecting the formwork panel frame.

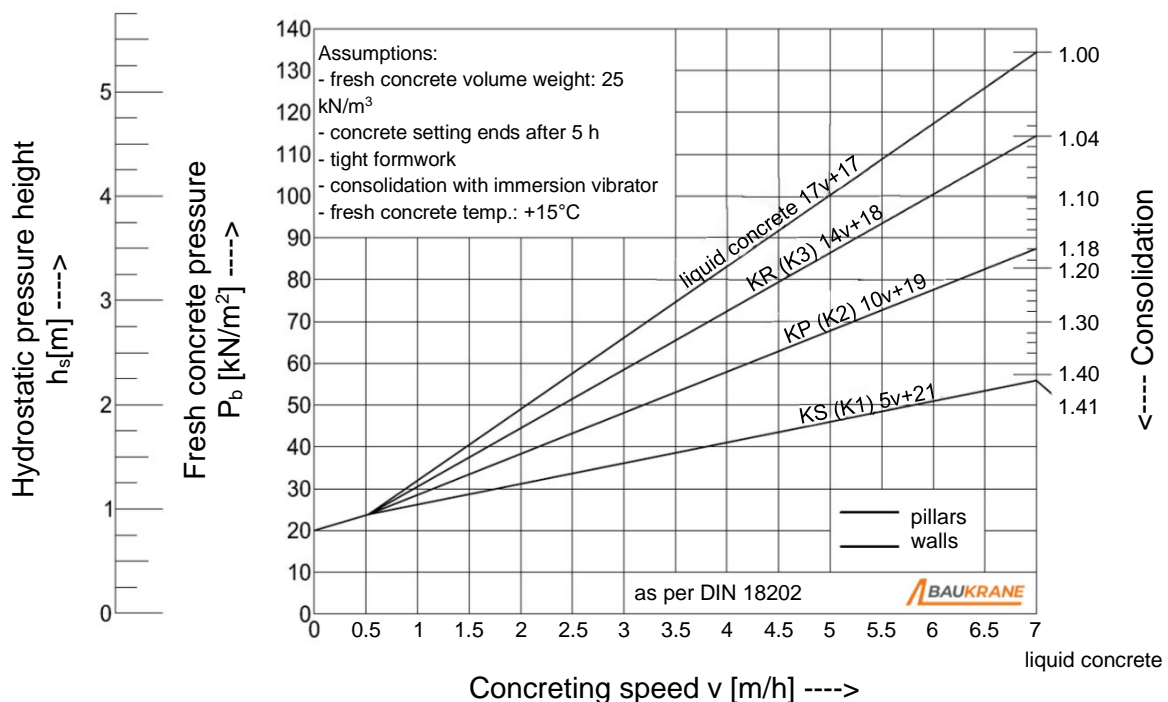
## 15. Concrete pressure

Bauframe and Bauframe Alu systems are designed to withstand fresh concrete mix pressure of 60 kN/m<sup>2</sup>. This value allows to maintain flatness tolerance as per DIN18202 (Table 3, row 7).

The diagram below shows a simplified method of determining the fresh concrete mix value (P<sub>b</sub>) depending on the concreting rate (v) and consistency, as per DIN18218.

The mix consistency is each time determined by the concrete supplier. Other information required to determine the required pressure is specified by the construction site manager. During concreting works, constantly monitor and adjust the concreting rate.

The construction site manager is responsible for correct determination of the actual fresh concrete mix pressure value.

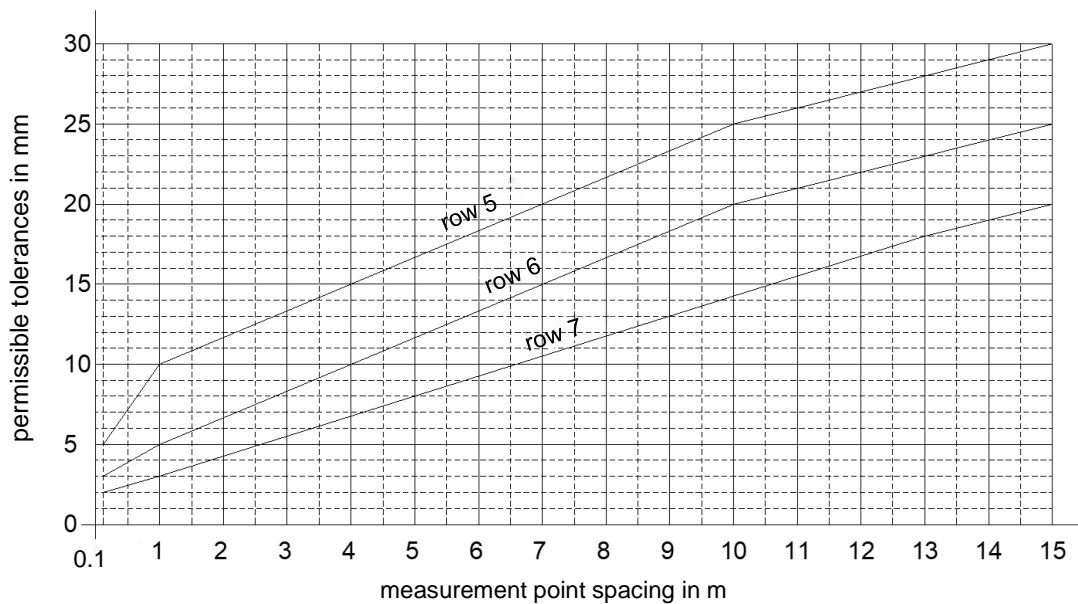


Factors having direct impact on the fresh concrete mix pressure value:

- concreting speed;
- formwork angle relative to the ground;
- concrete mix consistency;
- concrete mix temperature;
- temperature at a concrete mix pouring location;
- concrete mix setting time;
- concrete mix pouring direction;
- vibration conditions.

Exceeding the permissible formwork load capacity may result in loss of its flatness and failure to meet the requirements of DIN-18202, destruction of formwork elements or a construction disaster.

For detailed information on the fresh concrete mix pressure, refer to the full text of the DIN-18218 standard.



Permissible deformations of a concrete surface conform to DIN-18202, Table 3. The nomograph shows the maximum permissible out-of-plane deviation limits, depending on the adopted measuring point spacing. Permissible concrete mix pressure while maintaining permissible deviations from flatness for walls and lower surfaces of ceilings, for the total load = 100 kN/m<sup>2</sup>.

Column	1	2	3	4	5	6
		Deviations as limit values in mm, for spacing of measurement points in m:				
Row	Reference	0.1	1*	4*	10*	15*
5	Walls with unfinished surfaces and lower sides/bottoms of floor load-bearing structures	5	10	15	25	30
6	Walls with finished surfaces and bottoms of floors, e.g. plastered walls, facings, wall cladding, suspended ceilings	3	5	10	20	25
7	As for row 6, but with more stringent requirements	2	3	8	15	20

\* - intermediate values for measurement point spacing should be rounded to full mm

As per DIN-18202, it is assumed that a flat measuring rod is placed on protruding surface points constituting measurement points for which the distance is determined, being the distance between measurement points. The surface deviation is measured in the deepest location between the measuring rod rest points.

## 16. Occupational health and safety

Compliance with applicable OHS regulations and operating manuals is key for maintaining safety during formwork assembly and disassembly operations. This document may be used as an aid when determining occupational risk, especially as a source of information about potential hazards occurring during the use of the product. However, this document does not replace the occupational risk assessment and does not exhaust information about all hazards related to the product operation.

Note that the general illustrations presented in this manual are only partial and present the issue discussed in detail in a given part of the manual. Therefore, it may turn out that they are incomplete from the point of view of occupational safety and as such cannot constitute assembly guidelines. Only adherence to all guidelines and instructions described in this document guarantees full occupational safety.

Any person who works with given formwork should be familiar with this manual and with all safety instructions regarding operation of this equipment. Particular attention should be paid to people with limited cognitive abilities or who do not understand the language in which this document has been elaborated. These people should be additionally instructed, and if this is insufficient, they should use the equipment under necessary supervision.

Before use, each component should be checked in detail. Damaged, weakened, dismantled or corroded parts should be eliminated from use. Any use of any element outside Baukrane systems may pose a potential hazard and as such should always be precisely investigated. It is also the basis for releasing the Baukrane company from liability for possible damage to formwork and hazards present at the construction site. Any modification deviating from the factory specifications of the equipment is unacceptable and may pose a safety hazard.

Assembly and disassembly of formwork after the completion of works may only be performed by employees (installers) who have been correctly trained and are familiar with the installation manual and technical parameters of a given formwork type. Assembly and disassembly of

formwork should be performed in accordance with the procedure included in the operation and maintenance manual. In case of any doubts, the formwork user should contact the manufacturer. Any actions inconsistent with the formwork operation and maintenance manual may lead to its damage, destruction or cause an accident hazard on the construction site.

The equipment should be unloaded using mechanical devices or manually. However, it is forbidden to drop formwork elements from a trailer to the ground! Stored elements must not cross with one another and be stacked in a manner that may cause their spreading, which in turn may cause damage to formwork elements or pose an accident hazard.

No people can be present under a transported load when unloading and loading the formwork with a crane!

The use of formwork is allowed after its acceptance by the construction site manager or another authorised person.

The formwork acceptance should be confirmed by a required entry in the construction site logbook or technical acceptance report.

The safety requirements for disassembly are the same as for assembly. Disassembly of formwork should be performed in reverse order to its assembly. Dropping disassembled formwork elements on the ground is prohibited. Any removed elements should be segregated according to their intended use and laid in a place facilitating further loading without unnecessary additional handling.





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