

BALL COURT SYSTEM

SUPPORT BEAMS



60/40/2 mm - lengths 2477 mm or 4997 mm
With welded on fixation plate at both sides
135 × 60 × 10 mm - each with 2 slot holes, incl. screws

DIMENSIONS OF OUR BASEPLATES

FENCE HEIGHT mm	BASEPLATE (ALWAYS WITH GUSSET PLATE) mm
3000	250/250/15
4000	300/300/15
5000	400/400/20
6000	400/400/20

Special baseplates as L or U-profiles, as well as special dimensions, on request.

OUR PRODUCTS ARE AVAILABLE IN A HOT DIPPED GALVANIZED VERSION OR POWDER-COATED IN THE STANDARD COLOURS GREEN RAL 6005 AND ANTHRACITE RAL 7016. OTHER RAL COLOURS ON REQUEST.

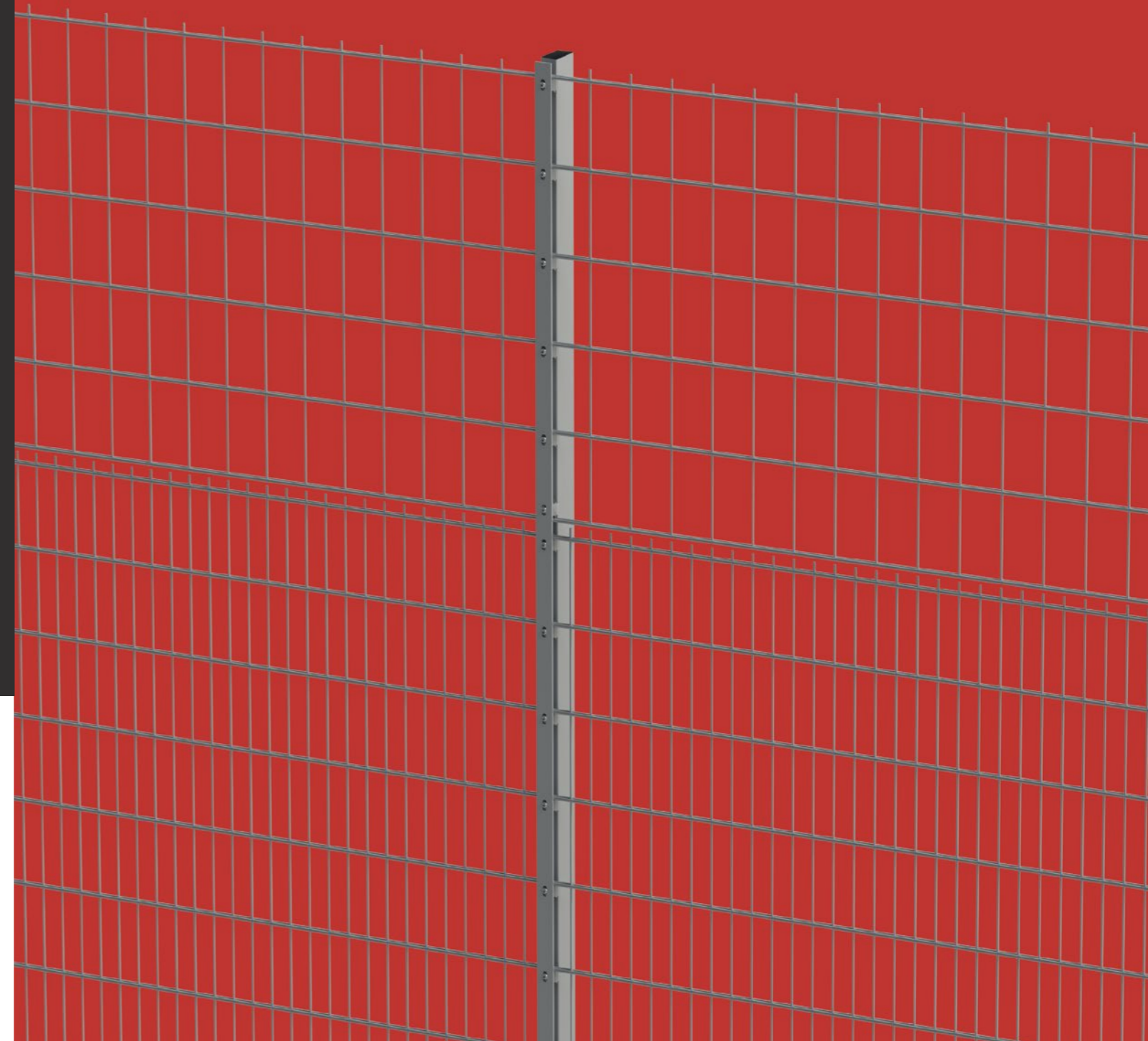
Notes:
All post profiles and foundation dimensions T&K.A. recommends comply with general structural requirements. They are not a substitute for the site-specific structural analysis as specified by construction supervision. This is to be provided by the customer.

All goods declared by us as hot dipped galvanized are hot dipped galvanized according to DIN EN ISO 1461. This procedure protects all metal components against corrosion. The formation of white rust cannot basically be prevented. It is a powdery, water-soluble product of zinc corrosion formed from zinc hydroxide and zinc oxide. This is not a quality defect and with the formation of the zinc patina layer, this occurrence disappears completely. Minor surface irregularities and zinc discharge points are production-determined features and are evidence of hot dipped galvanizing (source: Zinkberatung e.V., [the German zinc consultative body] Düsseldorf).

Technical details are subject to change. Custom-made products, other RAL colors and dimensions on request.

By using our modern tube laser system, we can offer you exceptional solutions for any demand you may have. Please contact us!

BALL COURT SYSTEM




Tillmann & Köckmann
GmbH & Co. KG

Specksloh 6
59757 Arnsberg
Germany

Tel.: +49 29 32 / 89 48 6 - 10
Fax: +49 29 32 / 89 48 6 - 29

E-Mail: info@tka-metall.de
Internet: www.tka-metall.de

 www.facebook.com/tundka



FOR MORE INFORMATION VISIT:
WWW.TKA-METALL.DE/BALL-COURT-SYSTEM

OR SCAN THIS QR-CODE:



BALL COURT SYSTEM



The T&K.A ball court system is the ideal solution for noise control at football grounds and sports stadia, as well as kindergartens and schools. Never again the clanking sound of the ball hitting the fence.

The rectangular posts (incl. PVC fixators and flat irons) are installed in combination with double bar panels 8/6/8 and are noise-free. This is how this ball court fence complies with the decree implementing the Federal Emissions Code and was tested and certified on 15 June 2013 by TÜV Nord.

We offer proven standard solutions for fence heights up to 6 m. If you are planning a combined installation of double bar panels and netting, then we are your first choice of contact.

Thanks to our state of the art facilities, special production runs are no problem. Special drilling patterns and a wide variety of geometries for the profiles can be manufactured quickly and efficiently, accurate to one hundredth of a millimetre. Special solutions as welded baseplates are possible to order. The high quality surface treatment also protects against corrosion during its long service life.



Map: Braas

NOTE ON STRUCTURAL STABILITY:

According to DIN 1055-4:2005-3, Germany is divided into 4 wind zones. Therefore, if a given structural performance (related to the ball court posts) is necessary, this is to be produced related to this object.

Ground conditions and wind loadings are important factors, which must be observed for the structural geometry, and can be determined only directly on site. Standard structural design patterns under building regulations are therefore not applicable.

Abbreviated Measurement Report																																																																																			
Client Tillmann & Köckmann GmbH & Co. KG Specksloch 6 D - 69767 Arnsberg	Test laboratory TÜV NORD TÜV NORD Systems GmbH & Co. KG Energy Technology Division Technical Unit Environmental Protection Langemarckstraße 20, D - 45141 Essen Tel: +49 201 825 3362 E-Mail: dhausrad@tuv-nord.de Akkreditiertes Prüflaboratorium nach DIN EN ISO / IEC 17025 und DIN EN ISO 3744 Laboratory accredited in accordance with ISO / IEC 17025 and ISO 3744																																																																																		
Definition of task The task of this investigation is to determine the emission data for Tillmann & Köckmann GmbH & Co. KG's ball catcher fence. To guarantee the same behaviour for the fencing field and achieve reproducible results, a gallow structure based on DIN EN 12800 was erected at the fence to be investigated. At the gallows, a tyre weighting 5.8 kg was fastened to a rope 3.4 m in length; the air pressure in the tyre was 2.0 bar. The effective height from which the tyre fell was selected as h = 1.30 m, which corresponded to a deflection of the "pendulum" by approx. 60°. The initiation took place as a maximum value consideration roughly in the middle of the fence panel. From this data, the speed of the test body on hitting the fence (equilibrium position), taking into account the above deflection, was calculated to be about 18 km/h. Converted to a comparable impulse, caused by a football with a weight of approx. 400 g, impact would have to take place at a speed of approx. 80 km/h.	Measurement results <table border="1"> <thead> <tr> <th rowspan="2">Nr.</th> <th colspan="2">Maximum level</th> <th rowspan="2">Nr.</th> <th colspan="2">Maximum level</th> </tr> <tr> <th>1 m</th> <th>5 m</th> <th>1 m</th> <th>5 m</th> </tr> </thead> <tbody> <tr><td>1</td><td>66.5</td><td>61.1</td><td>13</td><td>69.2</td><td>63.5</td></tr> <tr><td>2</td><td>66.0</td><td>61.2</td><td>14</td><td>69.7</td><td>63.2</td></tr> <tr><td>3</td><td>67.6</td><td>61.6</td><td>15</td><td>69.3</td><td>63.3</td></tr> <tr><td>4</td><td>68.2</td><td>62.9</td><td>16</td><td>69.7</td><td>63.5</td></tr> <tr><td>5</td><td>71.6</td><td>65.8</td><td>17</td><td>70.4</td><td>63.4</td></tr> <tr><td>6</td><td>68.2</td><td>63.2</td><td>18</td><td>67.8</td><td>62.0</td></tr> <tr><td>7</td><td>69.6</td><td>63.7</td><td>19</td><td>68.1</td><td>62.6</td></tr> <tr><td>8</td><td>69.1</td><td>63.3</td><td>20</td><td>69.8</td><td>64.4</td></tr> <tr><td>9</td><td>70.4</td><td>64.8</td><td>21</td><td>67.1</td><td>62.4</td></tr> <tr><td>10</td><td>69.3</td><td>63.1</td><td>22</td><td>69.0</td><td>64.0</td></tr> <tr><td>11</td><td>70.0</td><td>65.0</td><td>23</td><td>69.9</td><td>64.0</td></tr> <tr><td>12</td><td>70.5</td><td>64.8</td><td>24</td><td>68.0</td><td>62.3</td></tr> </tbody> </table> The mean maximum energy level $L_{Aeq,T} = 69/63/59$ dB (A) at the related distances was computed from the atm measured values. The maximum level that occurred during the measurements was $L_{Amax} = 72/66/62$ dB(A). In the interest of accuracy the mean maximum sound level measured within 5 m and a hemispherical propagation are taken as the basis for calculating the sound power level. The result in this case is a sound power level of $L_{W} = 81$ dB(A).	Nr.	Maximum level		Nr.	Maximum level		1 m	5 m	1 m	5 m	1	66.5	61.1	13	69.2	63.5	2	66.0	61.2	14	69.7	63.2	3	67.6	61.6	15	69.3	63.3	4	68.2	62.9	16	69.7	63.5	5	71.6	65.8	17	70.4	63.4	6	68.2	63.2	18	67.8	62.0	7	69.6	63.7	19	68.1	62.6	8	69.1	63.3	20	69.8	64.4	9	70.4	64.8	21	67.1	62.4	10	69.3	63.1	22	69.0	64.0	11	70.0	65.0	23	69.9	64.0	12	70.5	64.8	24	68.0	62.3
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Measurement conditions Measurement period: 15 June 2013, 09:45 to 10:45 Meteorology: Air temperature approx. 18°C, gentle breeze (< 5 m/s) from the south-east Sound level meter: Niesonic type 140, equipment number 1403102/07, calibrated until end 2013 Niesonic type 140, equipment number 1403102/07, calibrated until end 2013 Niesonic type 140, equipment number 1404811, calibrated until end 2014 Microphone height: approx. 1.3 m above ground level, distance approx. 1 m, 3m and 5m from the point of impact The measurement setup was calibrated before the measurements began. After the measurements had ended, the calibration was checked. The result did not reveal any deviations. Assessment According to 18.BImSchV, during the day in quiet periods in purely residential areas, sporting facilities must comply with a required value of 45 dB(A). This required value must not be exceeded during individual short-term bursts of noise by not more than 30 dB(A). In our judgement, with the noise level that occurs when a ball hits it at a distance of 1 m the fencing investigated meets the requirement. This means that noise level peaks do not exceed the required value permitted by the atm order when a ball hits the fencing, even if the distance between the ball catcher fence and existing development requiring protection is small.																																																																																			
Date of test: 15 June 2013	Tested by: <i>[Signature]</i>																																																																																		

The speed of an average wind gust from north is approx. 30 km/h.
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RECTANGULAR POST FOR INSTALLATION WITH DOUBLE BAR PANELS ALL OVER



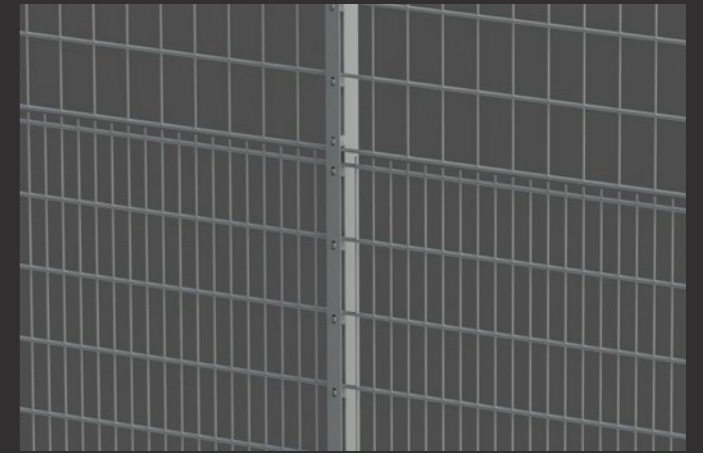
FIXATION WITH FLAT IRON 40/5

200 MM DRILLING PATTERN – LAST HOLE AT 160 MM

PVC FIXING SUPPORT AT EACH RIVET

Can be used only with double bar panels 8/6/8.
Up to a fence height of 2000 mm mesh 50/200 mm, above this mesh 100/200 mm.
The PVC fixing support is fitted by means of a threaded sleeve to the post. On top of each post you can find a lamellar cap.

Accessories: Lamellar cap, flat irons 40/5, M8x40 stainless steel hexagon socket screws (Allen screws)



FENCE HEIGHT APPROX. mm	POST PROFILE mm	CORNER POST PROFILE mm	PANEL HEIGHTS mm	NUMBER OF PVC FIXING SUPPORTS
3000	80/40/3/3800	80/80/3/3800	2030+1030	17
4000	100/40/3/4850	100/100/3/4850	2030+2030	22
5000	120/40/3/6000	120/120/3/6000	2030+2030+1030	28
6000	120/40/3/7000	120/120/3/7000	2030+2030+2030	33
6000	120/60/3/7000	120/120/3/7000	2030+2030+2030	33

RECTANGULAR POST FOR COMBINATION OF DOUBLE BAR PANEL AND NETTING

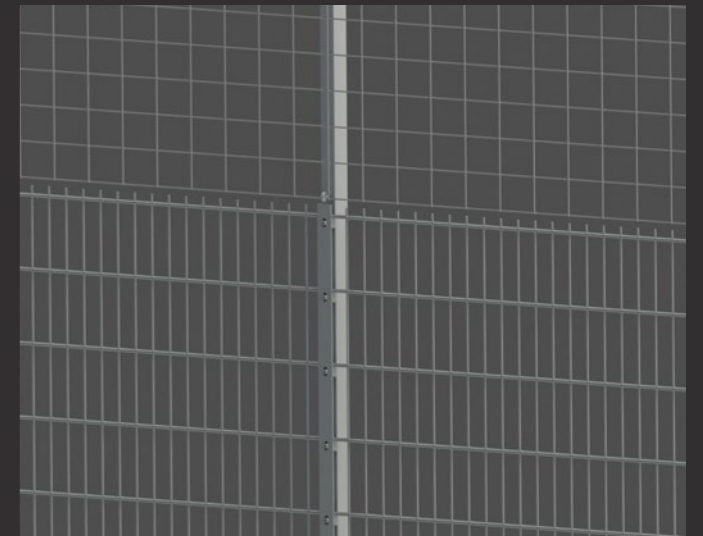
AT THE BOTTOM PANEL OF 2030 MM HEIGHT

200 MM DRILLING PATTERN, LAST HOLE AT 160 MM

AT THE TOP PREPARED FOR NETTING FIXATION BY M8 EYE BOLTS FOR NET HEIGHTS 1000–4000 MM AND SUPPORT BEAMS BOTH SIDES.

Can be used only with double bar panels 8/6/8.
Up to a fence height of 2000 mm mesh 50/200 mm, above netting fixation.
The PVC fixing support is fitted by means of a threaded sleeve to the post. On top of each post you can find a lamellar cap.

Accessories: Lamellar cap, flat irons 40/5, M8x40 stainless steel hexagon socket screws (Allen screws) and eye bolts M8



FENCE HEIGHT APPROX. mm	POST PROFILE mm	CORNER POST PROFILE mm	PANEL HEIGHT mm	NUMBER OF PVC FIXING SUPPORTS	NET HEIGHT mm	NUMBER OF EYE BOLTS
3000	80/40/3/3800	80/80/3/3800	2030	11	1000	2
4000	100/40/3/4850	100/100/3/4850	2030	11	2000	2
5000	120/40/3/6000	120/120/3/6000	2030	11	3000	3
6000	120/40/3/7000	120/120/3/7000	2030	11	4000	3
6000	120/60/3/7000	120/120/3/7000	2030	11	4000	3

In addition to the T & K.A ball court system, we offer integrated swing gates or loopholes. We will be pleased to give you detailed advice.