## Installation guidelines for Keno structure

Before installing an anchored structure on a sloping or flat roof, the following guidelines developed on the basis of PN-EN-1991-1-4:2008 and PN-EN 1991- 1-3:2005 should be read and strictly followed in order for the installation to be covered by the product warranty.

1. The maximum spacing between mounting points depending on the profile used (standard profile  $40x40 \text{ mm} \rightarrow \text{K-01}$ , reinforced profile  $40x80 \text{ mm} \rightarrow \text{K-25}$ ), the angle of inclination of the modules and the maximum length of the module frame and its mounting method.

Profile type	Maximum dimensions of the modules taking int side of the module using a structu	o account the method of mounting on the shorter are supported by mounting triangles (see the fig.)
K-01	≤1780	>1780
Angle of inclination of modules [°]	Maximum spacing between profile mounting	brackets to roof structure [m]
10	1.5	1.3
15	1.4	1.2
20	1.4	1.2
25	1.3	1.2
30	1.3	1.1
35 ≤	1.6	1.4

a) Anchored structure based on mounting triangles



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Profile type	Maximum dimensions of the modules taking int supported by mounting triangles	o account the method of mounting on the (see the fig.)
	≤1780	1780-2115
K-01		
Angle of inclination of modules [°]	Maximum spacing between profile mounting	brackets to roof structure [m]
10	1.5	1.3
15	1.4	1.2
20	1.4	1.1
25	1.3	1.1
30	1.3	1.1
35 ≤	1.6	1.4



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Profile type	Maximum dimensions of the modules taking int side of the module using a structu	o account the method of mounting on the shorter are supported by mounting triangles (see the fig.)
К-25		
Angle of inclination of modules [°]	Maximum spacing between profile mounting	brackets to roof structure [m]
10	3.7	3.0
15	3.6	2.9
20	3.5	2.8
25	3.4	2.8
30	3.4	2.7
35 ≤	3.8	3.0



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Profile type	Maximum dimensions of the modules taking int supported by mounting triangles	o account the method of mounting on the (see the fig.)
	≤1780	1780-2115
K-25	≤1050	1050-1150
Angle of inclination of modules [°]	Maximum spacing between profile mounting	brackets to roof structure [m]
10	2.7	2.2
15	2.7	2.2
20	2.6	2.1
25	2.6	2.1
30	2.5	2.0
35 ≤	2.8	2.8



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b) Anchored structure based on double-threaded screws and mounting adapters k-03, and mounting brackets such as K-12.





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2. Safe zones necessary to maintain from the edge of the roof:

Type of construction	Minimum distance from the edge of the roof to the beginning of the structure [cm]	Maximum length of the projecting edge of the module beyond the last mounting point [cm]
Structures for sloping roofs (parallel to the roof sheathing)	30	30
Structures for flat roofs and increasing the roof angle	100	50
Ground structures	-	50

3. Safe zones necessary to maintain from the edge of the last profile to the edge of the last clamp:

Profile free zone from edge of end clamp to edge of profile [cm]	
2	

- 4. Joining profile sections:
  - The minimum length of the profile that is considered useful for the purpose of extending a given string is **0.5m**,
  - Each section of the profile must be **supported at a minimum of two mounting points**, if it is not possible to support at two points, the extension must not occur at extreme points it must be placed in the center of the given sequence of profiles,
  - The connector can be located anywhere between the support points of the profile, preferably when it is in the immediate vicinity of the support point the location of the connection in the middle part exposes the structure to more stress,
- 5. Proceeding in the case of structures intended for installation only in the sheet metal layer with K-20 sheet metal screws:
  - Minimum sheet thickness of **0.4mm**,

