	Internal performance rules	Rules for order fulfilment for insulating glass units made with „pressure equalization”, so called „Altimeter”	
	IGU production	Plants: Radomsko, Tczew ,Varazdin , Mietno	Valid from: 07.06.2023
	Developed by: Martyna Cieżka	Approved by: Dominik Zalewski	Valid to:

Requirements:

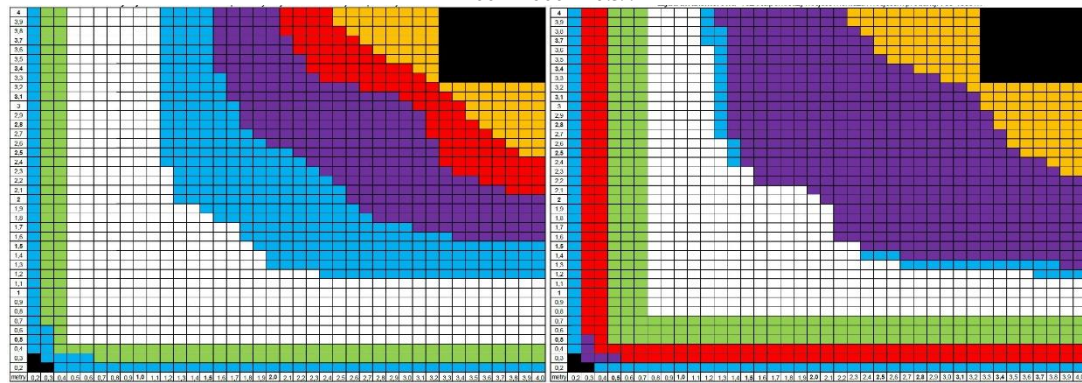
Selection of dimensions, structure, type of glass used, properties of the insulating glass unit should result from design calculations taking into account conditions of its application. The following assumptions are suggested minimum requirements.

1. Assumptions:

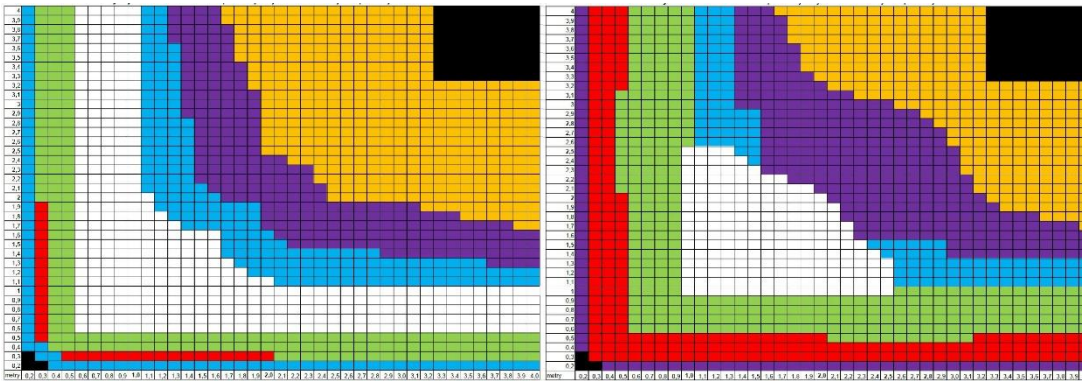
The adopted assumptions are based on calculations according to the UKO program:

- Wind load for Zone III (the use of glass in higher load zones require the receipt to increase the strenght of the structure)
- Climatic loads +20 °C / -20 °C - standard
- Pressure changes -20 hPa / + 40 hPa – standard

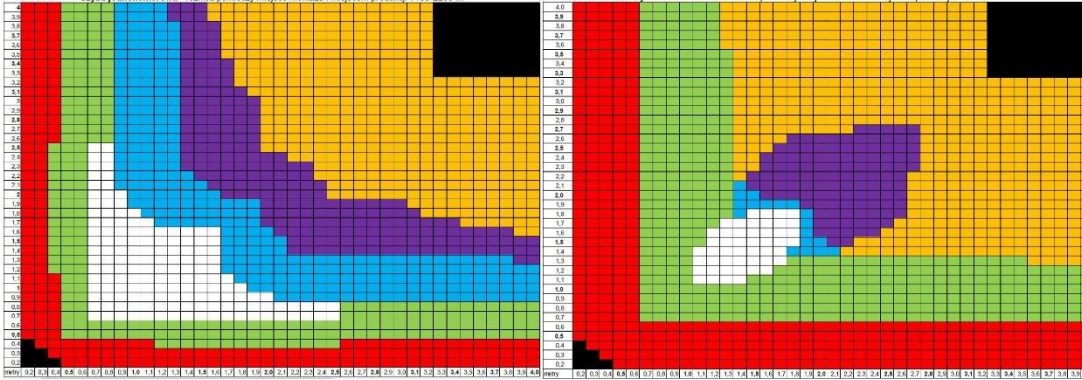
2. Acceptable constructions of insulating glass units depending on the difference in height between the production and assembly level
700 – 1000 m a.s.l.




1001 – 1400 m a.s.l.



1401 – 2200 m a.s.l.



- Legend:
- 4mm hart
 - 6mm hart
 - 6mm float
 - Not tempered
 - 4mm hart, 33.1 lami
 - 4mm hart, 6mm float, 33.1 lami
 - We don't produce Altimeter

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3. Details about the construction of IGU

- Frames from 12mm to 24mm do not require consultation
- Installation of Georgian bars is allowed with the use of tempered glass and the required difference of 6mm between the thickness of the frame and Georgian bar. Example: 8mm Georgian bar, 12mm frame, 12-8=4, unacceptable and 14mm frame must be used
- Unlimited figures according to the calculation up to 2m².
- In double chamber units, it is acceptable to use untempered middle glass, despite the need to use tempered external glass, if the customer does not have such a requirement.

4. Principles for production planning:

- The production of pressure equalization takes place minimum 8 hours after production for PS/PU (recommended 24h), and 24h for silicone.
- Structures for other assumptions require individual calculation and confirmation by the Process Engineer
- For double chamber units made with CEKAL certificate, the minimum difference in height is 300 m a.s.l.
- For height differences between the production and installation levels below 700m a.s.l. pressure equalization we make according to the customer's request.

5. Order acceptance data:

- Average outside temperature of the glass installation site
- Maximum internal temperature of the room where the glass is installed
- Mounting height
- Transport height

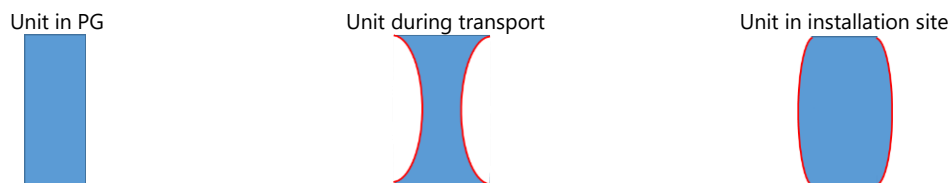
Location of plants:

- Radomsko - 246 m a.s.l
- Tczew - 39 m a.s.l
- Varazdin - 170 m a.s.l
- Miętno - 50 m a.s.l
- Tychy - 251 m a.s.l
- Kowno - 48 m a.s.l

6. Recommendations for transportation

- Maximum transport height must not exceed two times the difference between the installation height and the production height
- During transport, the unit should be built into the window or specially dilated to allow free operation of the central part of the unit

Behaviour of the insulating glass unit during transport above the installation site:



Sample calculation:

PG RA - Production site 246 m a.s.l.

Installation site 1200 m a.s.l.

Calculation of the maximum transport height	Production site	Installation site	Height difference	
Difference between production height and installation height	246	1200	954	m
Maximum transport height	Double height difference (2x954)		1908	m a.s.l.