

VISIOMOD

RAILING & GLASS SYSTEMS

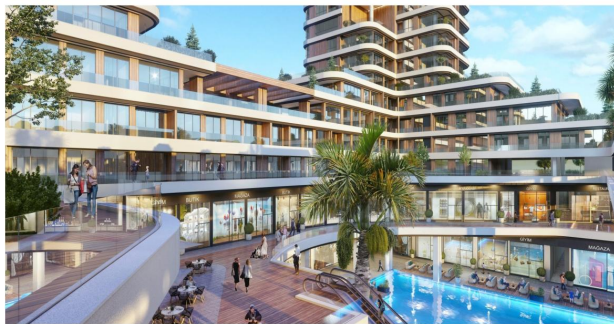
FS 7000

Heavy-Duty Frameless Glass Railing System

Architectural products

LUXERA TOWERS

VISIOMOD FS 7000



VMFS700 1

REFERENCE PROJECT

Luxera Towers — Mixed-Use Development

Profile

6063 T5 Alu

Glass

10+10mm Tempered

Load

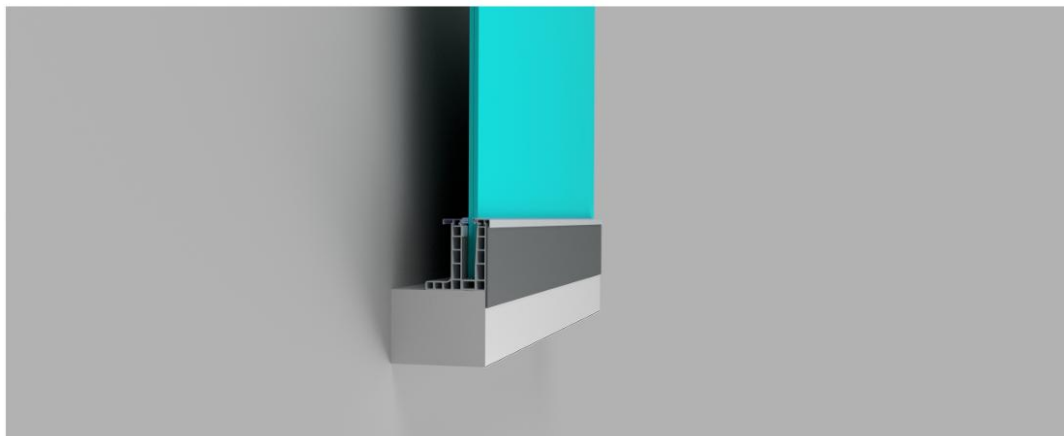
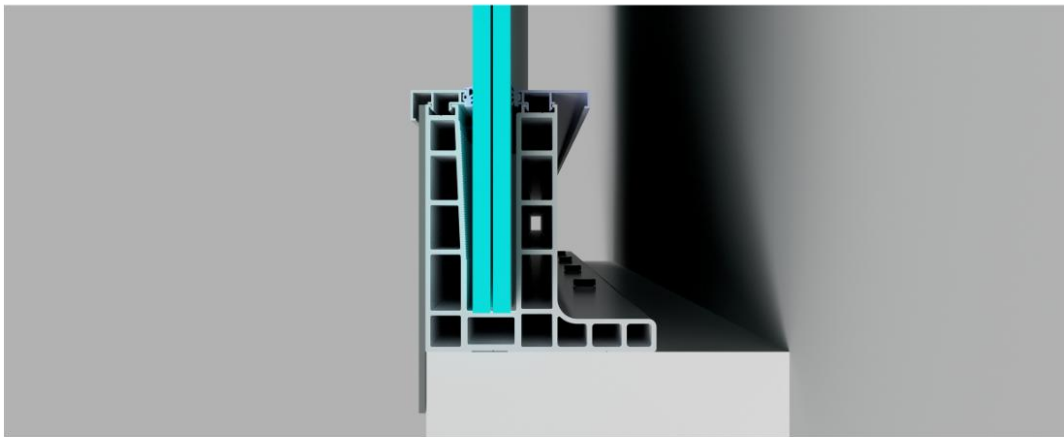
7.0 kN/m

Standard

EN 1991-1-1

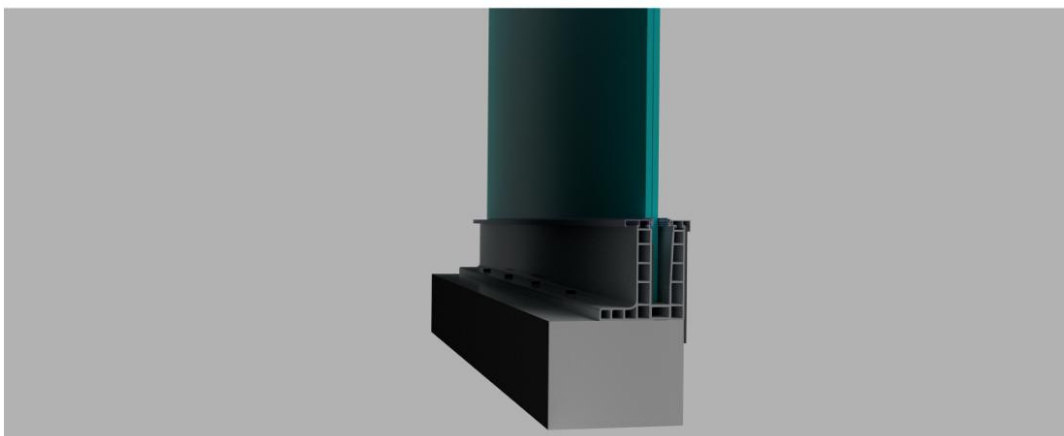
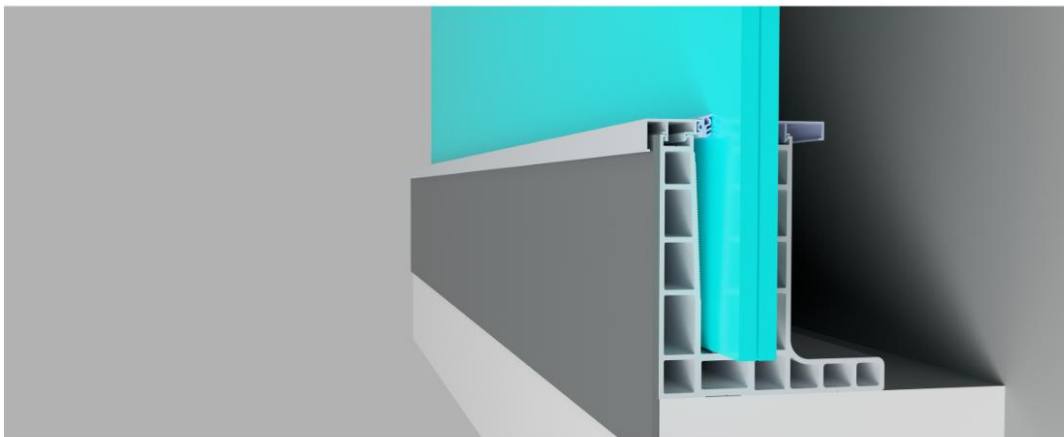
Profile Detail — Side Mounting

Reinforced aluminium base channel — side-mounted configuration



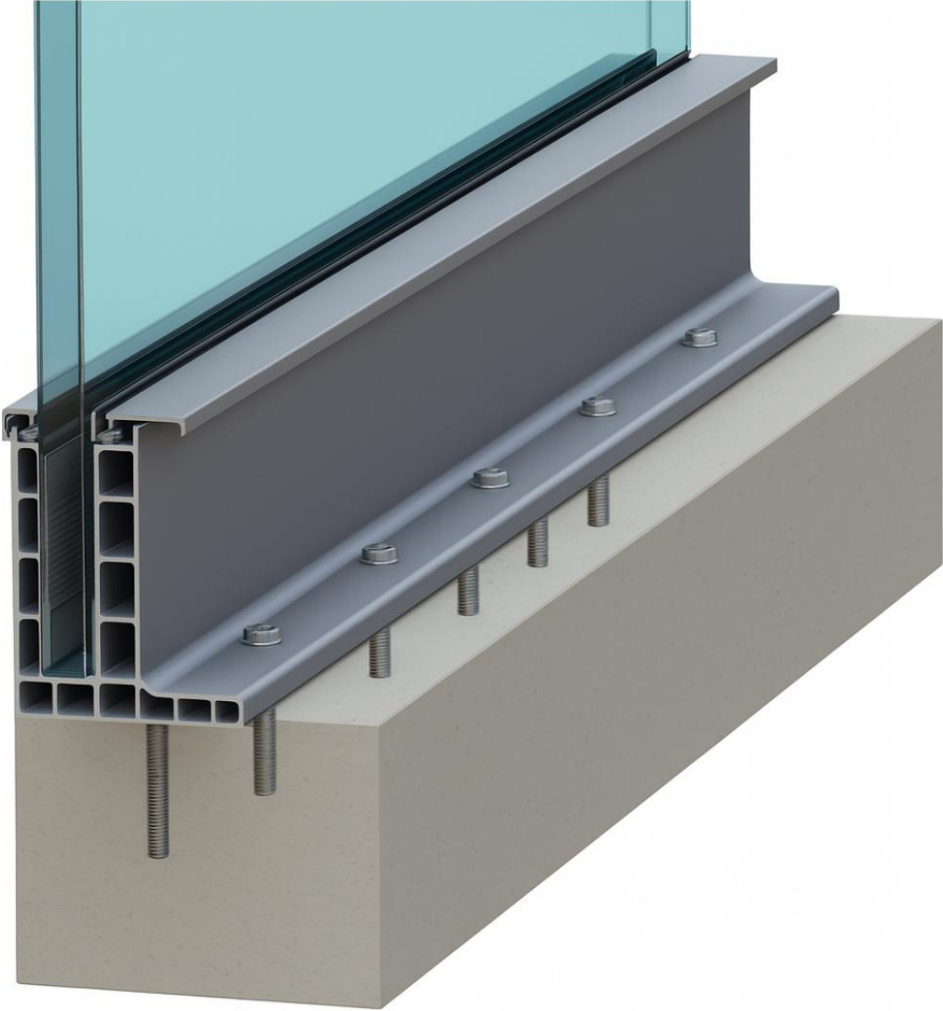
Profile Detail — Top Mounting

Aluminium base channel — top-mounted for balcony edge



Assembly — Base Channel to Concrete

Reinforced profile anchored to concrete slab with chemical bolts. VSG 10+10mm glass.



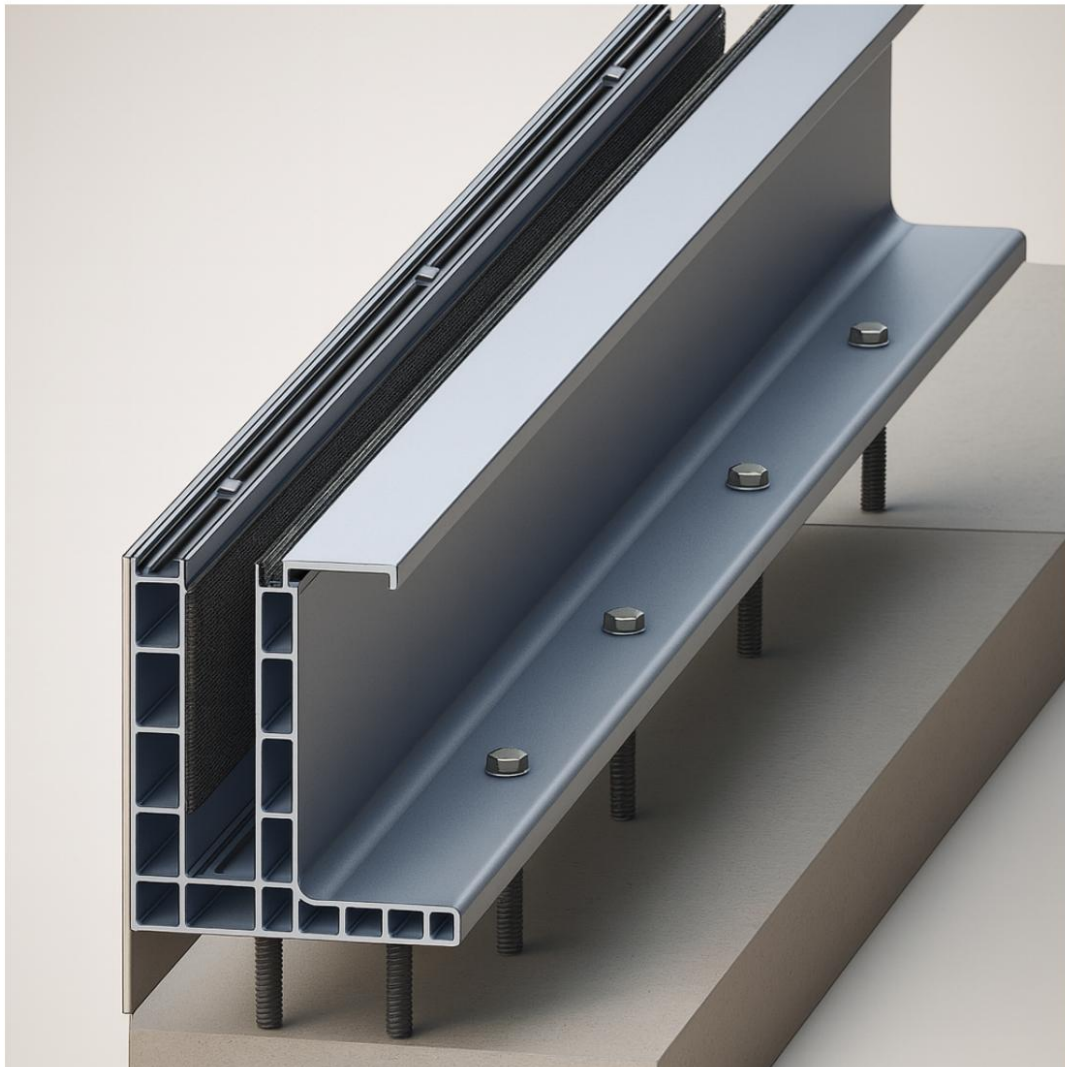
Glass Fixing — Wedge-Lock System

Rubber wedge insert secures glass within the channel. EPDM gaskets for vibration isolation.



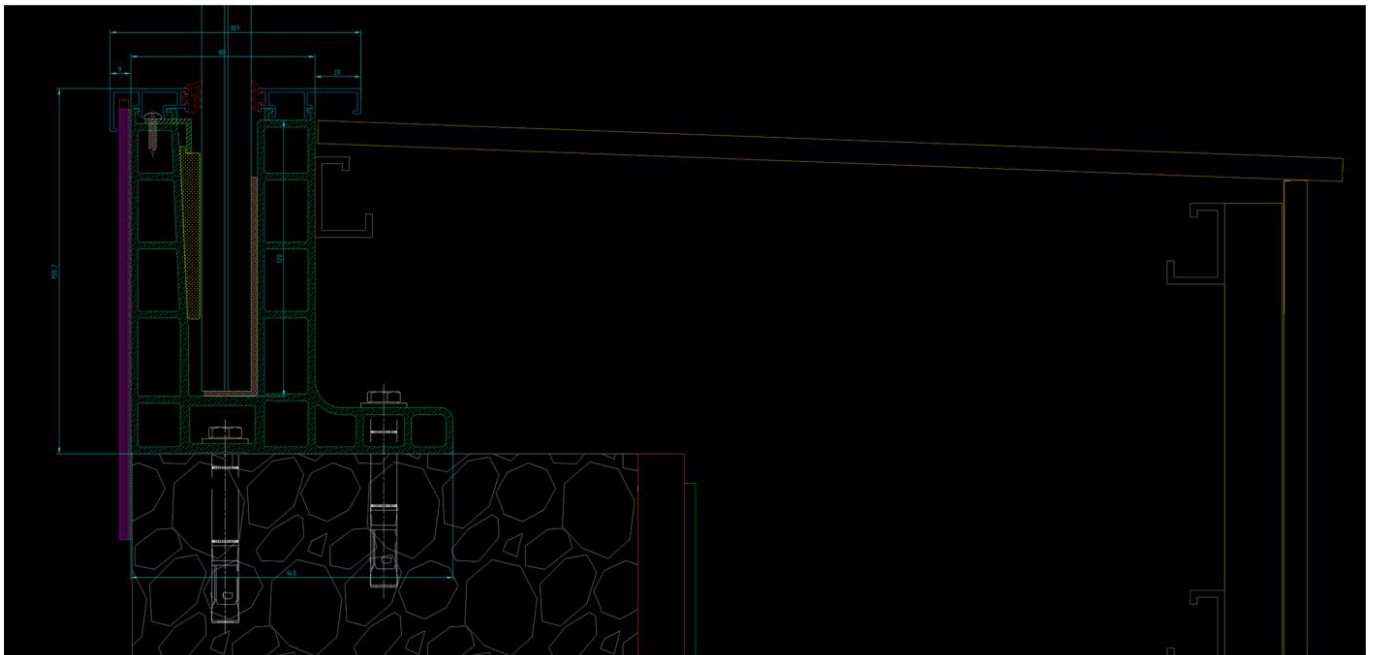
Complete Profile — 3D Section

Multi-chamber aluminium extrusion with steel reinforcement plate and cover cap.



CAD Section Detail

Dimensioned cross-section: profile geometry, glass clearances, anchor depth.



Structural Analysis — FEA Parameters

Material Properties

Aluminium Profile:	6063 T5
Glass:	Tempered Laminated (10+10 mm)
Applied Force:	1,000 N (EN 1991-1-1)
Wind Pressure:	4,500 Pa ultimate / 3,000 Pa working

Analysis Assumptions

Boundary:	Fixed at anchor bolt holes
Contact Types:	Bonded profile-to-profile and profile-to-glass
Glass Criterion:	Maximum Principal Stress (brittle)

Safety Factor

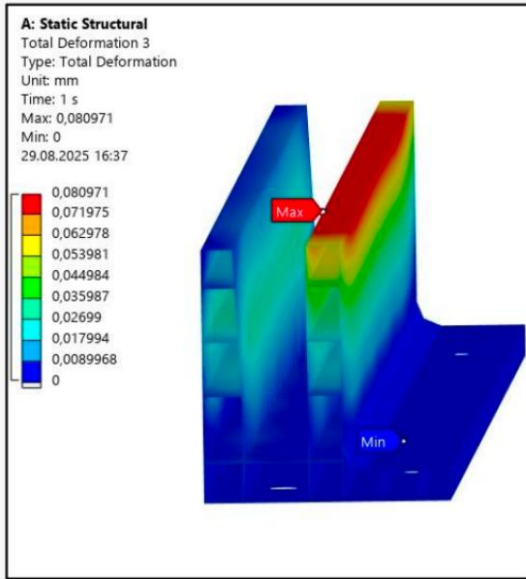
Ultimate:	4,500 Pa wind pressure
Working:	3,000 Pa (recommended design)
Factor:	1.5x (dynamic loads, resonance, impact, tolerances)

FEA — Human Load (1,000 N)

Deformation: 0.08 mm · Stress: 37.4 MPa vs 220 MPa yield — Safety Factor > 5x

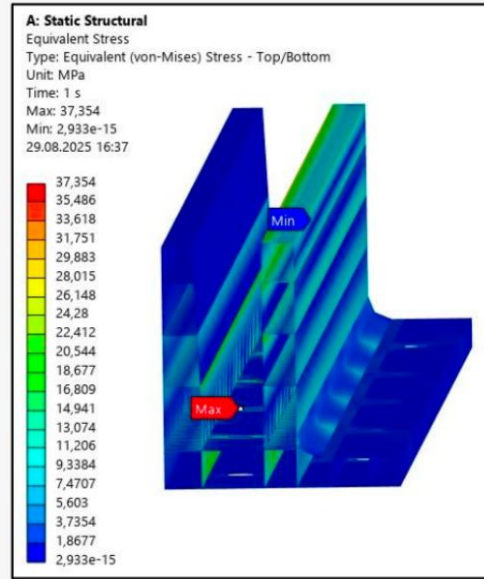


• DEFORMASYON



• 0,08 mm

• MAKSİMUM STRESS



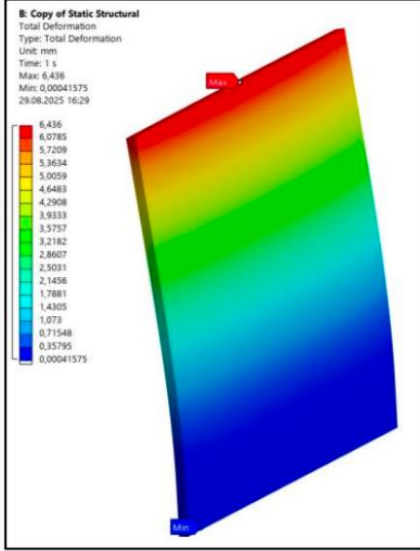
• 37,4 Mpa (Max: 220MPa)

FEA — Wind Load (4,500 Pa)

Deformation: 6.4 mm · Stress: 26 MPa vs 220 MPa — Working: 3,000 Pa (SF=1.5)

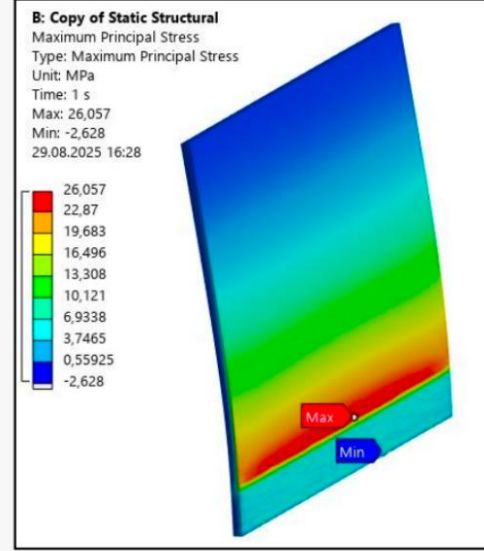


• DEFORMASYON



• 6,4 mm

• MAKSİMUM STRESS



• 26 MPa (Max: 220MPa)

Analiz girdilerinde rüzgar basıncı 4500 Pa'dır. Bu kuvvet camların Maksimum dayanabileceği kuvvet olarak belirlenmiştir.

Ancak güvenli tasarım için önerilen çalışma basıncı 3000 Pa'dır. Bunun nedeni camın gevrek (brittle) bir malzeme olmasıdır. Camın kırılması yalnızca rüzgar basıncına bağlı değildir; dinamik yükler, rezonans, darbe etkileri ve montaj toleransları gibi ek faktörler de kırılmaya sebep olabilir.

Bu sebeple, camın güvenli kullanımını sağlamak amacıyla çalışma basıncı maksimum dayanımın altında tutulmuş ve yaklaşık 1,5 emniyet katsayısı uygulanmıştır.