RIVO FIX – ENGINEERING & CAD SYSTEM DESCRIPTION

1. SYSTEM OVERVIEW

RIVO Fix is a modular aluminum profile structural system designed for engineering infrastructure frames including sanitary installations, false walls, and standalone partitions.

2. STRUCTURAL PRINCIPLE

The system operates as a frame structure composed of vertical posts and horizontal beams. Loads are transferred through nodes into floor and wall supports.

3. COORDINATE MODEL

Global coordinate system: X – width, Y – height, Z – depth. Front view: XY plane. Side view: YZ plane.

4. LOAD MODEL

Primary design load for installation frames: up to 400 kg. Load transferred to vertical posts and base supports.

5. FRAME GENERATION ALGORITHM

Step 1 – Input geometry (W, H, D).
Step 2 – Calculate number of vertical posts.
Step 3 – Place horizontal beams.
Step 4 – Insert connection nodes.
Step 5 – Validate structural stability.

6. POST COUNT FORMULA

$N = floor(W / S) + 1$

7. BENDING MOMENT FORMULA

$M = F * L$

8. STRESS FORMULA

$\sigma = M / W$

9. DEFLECTION FORMULA

$f = (F * L^3) / (3 * E * I)$

10. CAD RULES

Front view is primary. Side view is synchronized. Dimensions must include total width, height, depth, and center distances.

11. DXF LAYER STRUCTURE

PROFILE, CONNECTORS, DIMENSIONS, AXIS, EQUIPMENT

12. VALIDATION RULES

Ensure max water pressure <= 6 bar. Ensure structural stability and node integrity.