Fayaz Memon

Silo3D

Precision Engineering for Bulk Storage Design & Analysis

Fayaz Memon

The Expertise Behind the Innovation

Fayaz Memon represents a confluence of deep domain expertise in mechanical & structural engineering with cutting-edge software development.

Our mission is to create specialized tools for engineers that streamline complex design processes, enhance accuracy, and ensure compliance with the most rigorous international standards.

Silo3D is a flagship product embodying this commitment to precision, efficiency, and engineering excellence.

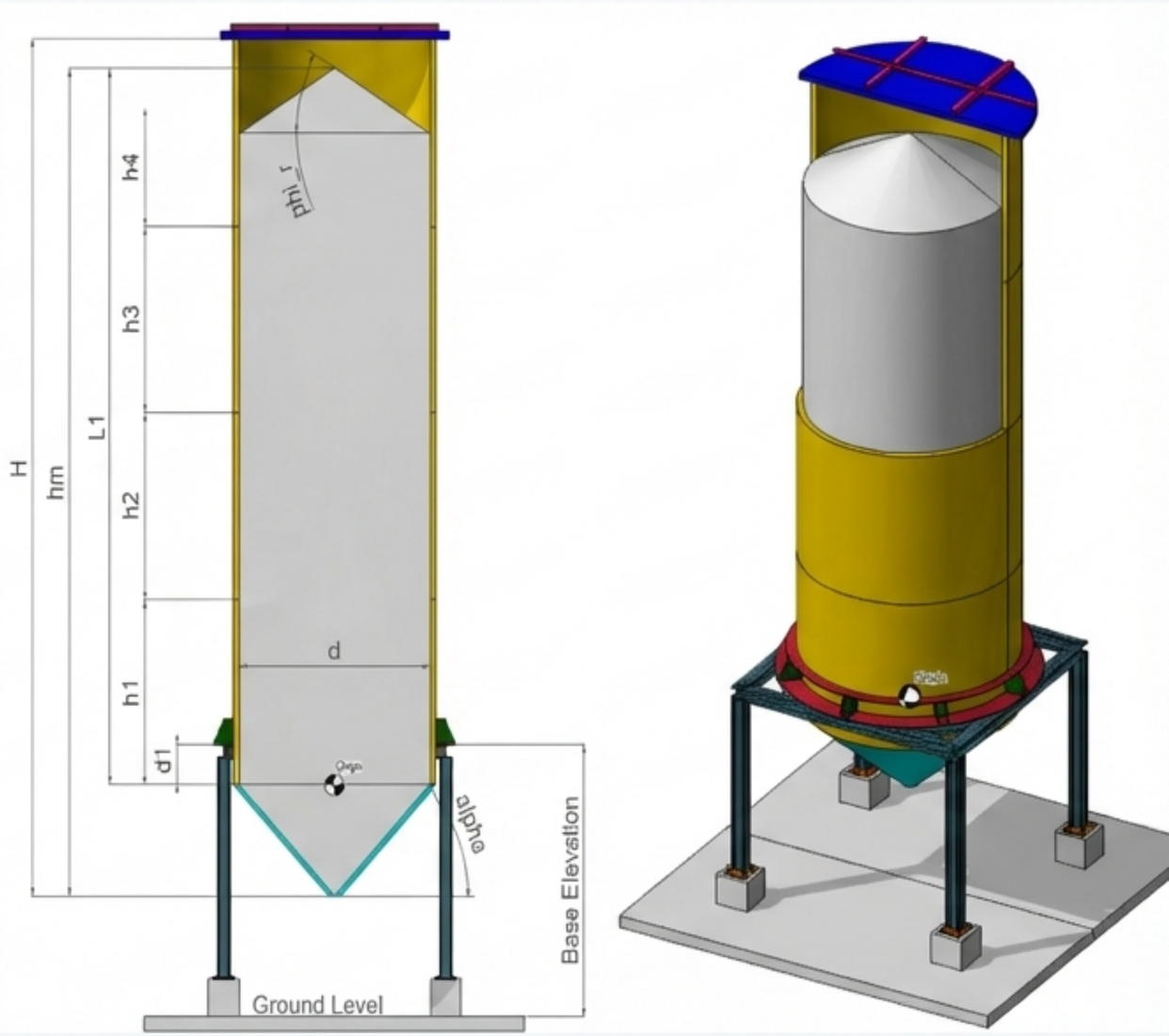
A Comprehensive Solution for Silo Design & Analysis

Silo3D is a powerful, integrated software tool designed to model, analyze, and validate industrial storage silos.

Design & Model: Create detailed models for silos storing a wide range of materials, including grain, cement, coal, and ash.

Calculate & Analyze: Perform robust engineering calculations for structural integrity against material weight, internal pressures, wind, and seismic forces.

Report & Export: Automatically generate detailed engineering reports and versatile 3D models for visualization, documentation, and collaboration.



Powerful Features for an End-to-End Workflow

Parametric Modeling

Input specific design parameters for silo geometry, materials, and environmental conditions in an intuitive interface.

Automated Reporting

Instantly generate detailed, professional-grade calculation reports in PDF format to document and communicate the design.

Comprehensive Analysis

Automated calculations for internal/external pressures, wall stress, stiffening rings, and nozzle reinforcement based on proven formulas.

Versatile 3D Export

Export models to DWG, 3D PDF, WebGL, IGES, and STL for seamless integration with CAD software and stakeholder review.

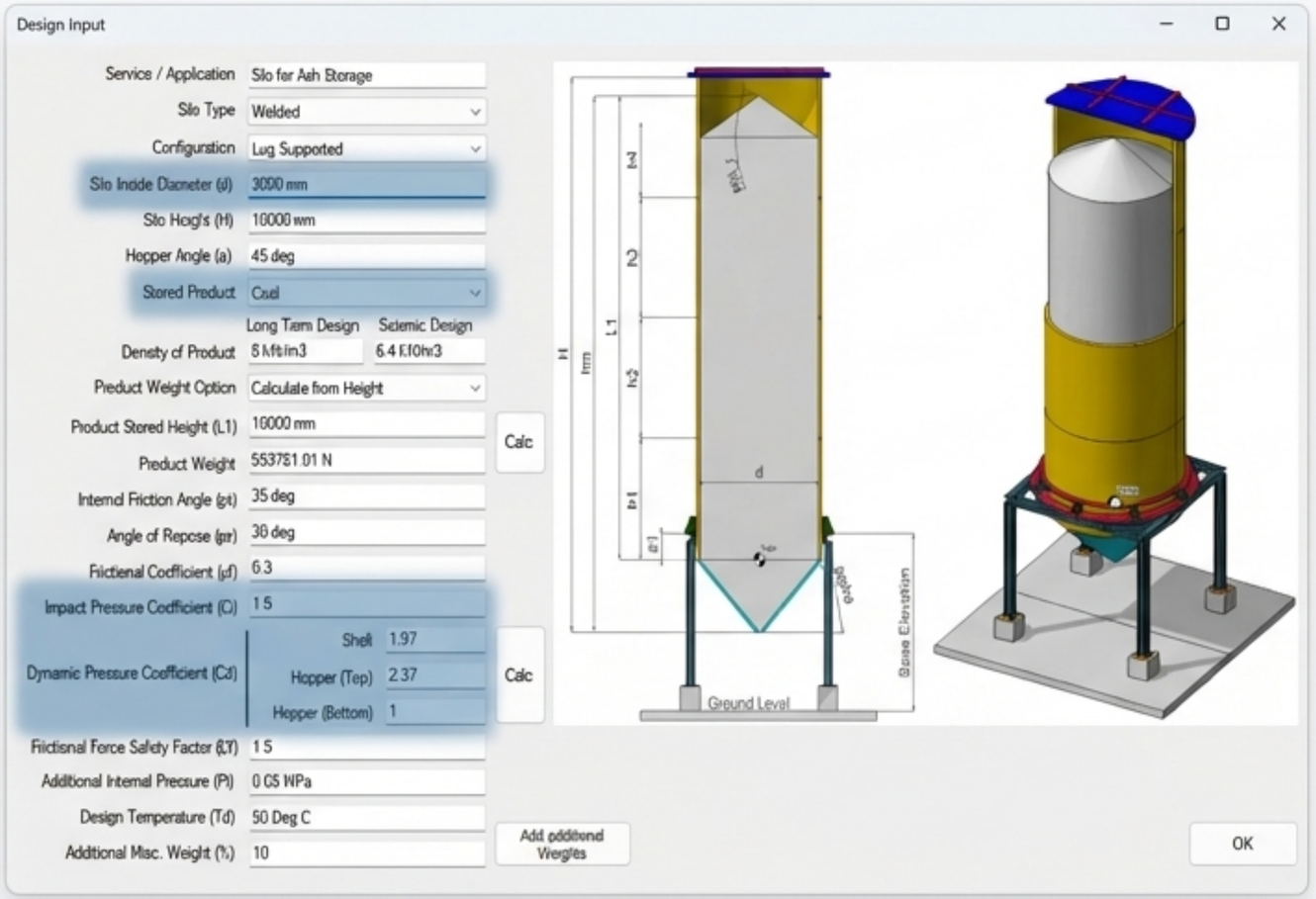
Code Compliance Engine

Perform calculations adhering to leading international standards, including ASCE 7-16, ASME Section VIII, and UBC 97.

Silo3D Interface: Foundational Design Input

Step 1: Intuitive & Comprehensive Parameter Input

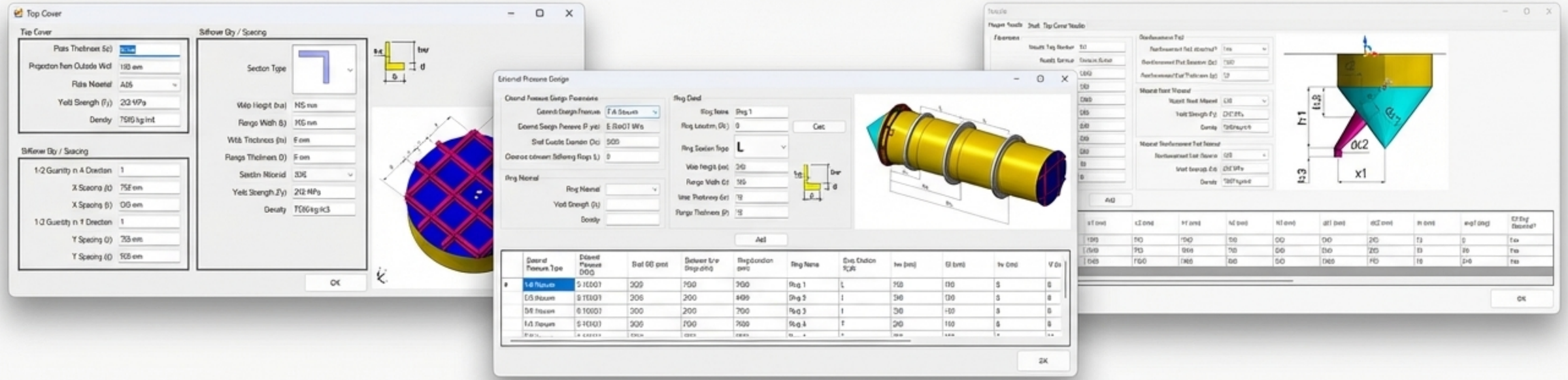
Begin your design by defining all critical parameters in one central location. The interface consolidates inputs for silo geometry, stored product properties, pressure coefficients, and design temperatures, providing immediate visual feedback with an interactive 3D model and schematic.



Silo3D Interface: Detailed Component Design

Step 2: Model Every Component with Precision

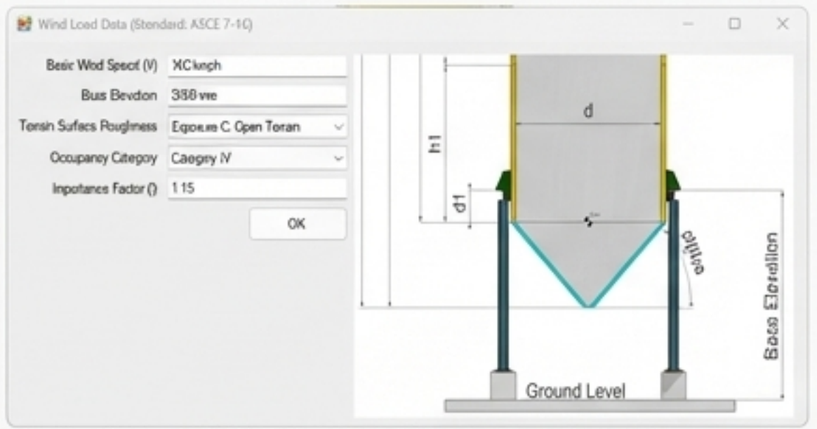
Drill down into the specific components that define your silo's structure and function. Silo3D's modular approach ensures every detail is accounted for, allowing you to meticulously design the top cover with custom stiffeners, define external pressure parameters and stiffening rings, and configure all hopper, shell, and top cover nozzles.

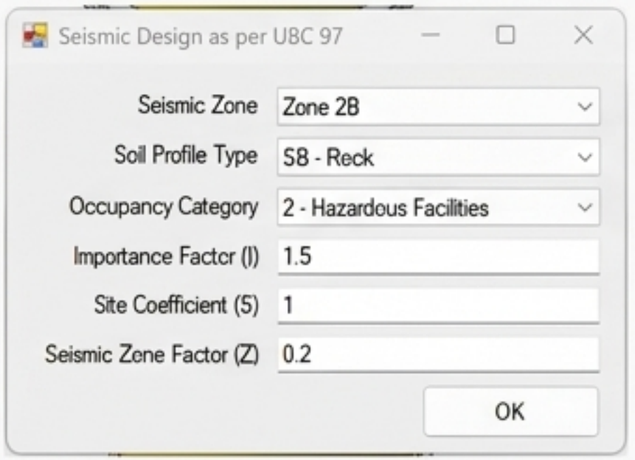


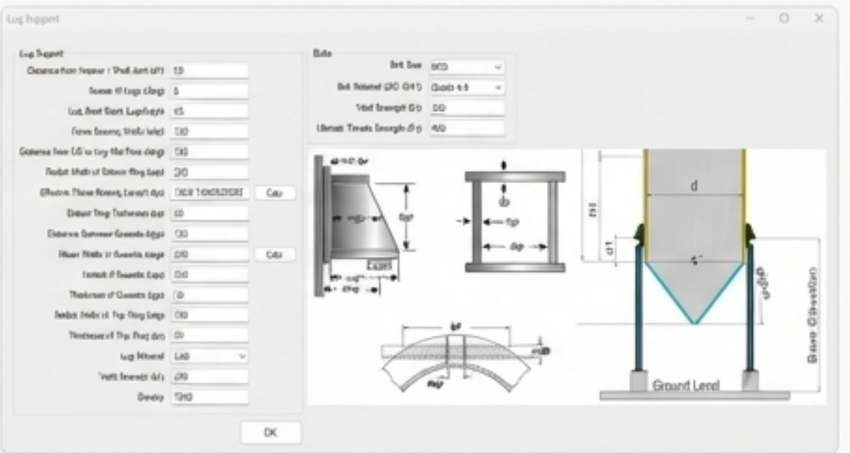
Silo3D Interface: Load & Support Analysis

Step 3: Robust Environmental & Structural Load Analysis

Easily input data for complex external forces and support systems. Configure detailed lug supports, define wind loads according to ASCE 7-16, and set seismic design parameters based on UBC 97. The software automates the complex calculations required for structural safety and regulatory compliance.







Silo3D Interface: Analysis & Results

Results

Table 1 | Table 2 | Table 3 | Table 4 | Table 5 | **Table 6** | Table 7 | External Pressure Calculation | Stiffening Rings | Hopper Nozzles | Shell Nozzles | Top Cover Nozzles | Wind Calculation | Weight | BOM

Evaluation of Wall Stress in Circumferential Direction (Local Pressure Considered)

	Calculation Point	ti (mm)	d (mm)	CL	dPL (MPa)	P (kN/m)	Mb (kN m)	Z (m3)	σb (MPa)	σt (MPa)	ft (MPa)	(σb+σt) / ft	Status
▶	Shell 1	10	3000	0.275	0.007	2.151	1853.438	0.071	26.133	3.911	166.75	0.18	Pass
	Shell 2	10	3000	0.275	0.006	1.809	1558.552	0.071	21.975	3.289	166.75	0.152	Pass
	Shell 3	10	3000	0.275	0.005	1.36	1171.879	0.071	16.523	2.473	166.75	0.114	Pass
	Shell 4	10	3000	0.275	0.003	0.772	664.849	0.071	9.374	1.403	166.75	0.065	Pass
*													

Step 4: Clear, Actionable Results

Instantly view detailed analysis results from your inputs.

The software generates clear tabular outputs for key calculations, such as the evaluation of wall stress. Each calculation point is assessed against allowable limits, providing an immediate **Pass/Fail** status for rapid design verification and iteration.

Engineered for Compliance & Trust

Sillo3D's calculation engine is built upon a foundation of globally recognized engineering standards, ensuring your designs are safe, reliable, and compliant.

Silo Design

Design Recommendation for Storage Tanks and Their Supports with Emphasis on Seismic Design (2010 Edition) Architectural Institute of Japan

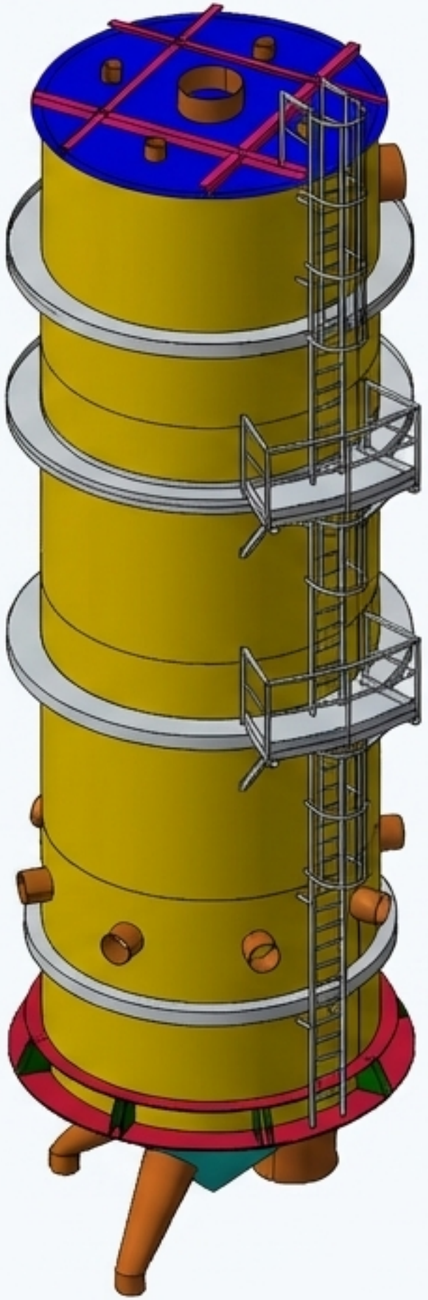
Structural & Pressure Vessel Design

ASME Section VIII, Division 1: Rules for Construction of Pressure Vessels, used for external pressure and nozzle design calculations.

Environmental & Natural Forces

ASCE 7-16: Minimum Design Loads and Associated Criteria for Buildings and Other Structures, used for wind load analysis.

UBC 1997: Uniform Building Code, used for seismic load design and analysis.



Accelerate Your Workflow. Enhance Your Designs.

Increased Efficiency

Automate time-consuming calculations and report generation, reducing complex design cycles from days to hours.

Improved Accuracy

Minimize the risk of manual errors with a validated calculation engine based on proven engineering principles and codes.

Ensured Compliance

Design with confidence knowing all analyses adhere to major international engineering standards for safety and reliability.

Enhanced Collaboration

Easily share detailed PDF reports and versatile 3D models (DWG, WebGL, 3D PDF) with clients, fabricators, and stakeholders.

Silo3D: The Essential Tool for Modern Silo Engineering

Silo3D is more than just a calculation tool; it’s a complete design ecosystem.

By integrating parametric modeling, multi-standard analysis, and automated reporting, it empowers engineers to create safer, more efficient, and fully compliant silo designs with unparalleled speed and confidence.

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Download Now

Explore the full capabilities of Silo3D and see how it can transform your design process.

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