

English Italiano Français Deutsch

FRAME
EC3
N.53331

Plan No.

JOB
E24/1108

OFFER
24/1048

State

☒ Issued for information and necessary action

Approved for Construction

Preliminary

Date

26/06/2025

ICIM

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FRAME FP 18/37-3V - NARROW CORR

LOADS ON FOUNDATION TABLE

Loads on the Slab at level 0,00 m

No. of sheets

Mod

18

No. of rings

Nv

37

No. of stiffeners/sheet

Nm

3

No. of stiffeners

Ntmf

54

Roof slope

α

30,00

degrees

Bottom slope

β

0,00

degrees

D

16,37

m

Diameter

D

16,37

m

Height of the roof

Ht

4,46

m

Height of the cylinder

Hc

32,60

m

Height of the pillars

Hpil

0,00

m

Height of the hopper

Hhop

0,00

m

Total height of silo

H

37,07

m

SILO MODEL

FP 18/37-3V

PRODUCT TYPE

Wheat

PRODUCT LOAD STANDARD

EN 1991-4 (2006)

DESIGN STANDARD

EN 1993

TYPE OF INSTALLATION

Battery

DISCHARGE TYPE

Central

SNOW ZONE

Sk = 2,50

kN/m²

WIND ZONE

qref = 1,95

kN/m²

SEISMIC ZONE

ag = 0,20

g

C = 0,1810

Design Bulk Density

γ

917,43

Kg/m³

VERTICAL PRESSURE ON THE SLAB [kN/m²]

BASE SHEAR

Ring Id. Number

Product Depth

Static Pressure

Dynamic Pressure

Hydrostatic Pressure

Base Shear for each stiffener

N

z [m]

PV1

PV2

PV3

Wind

19,88

kN

Earthquake

177,01

kN

LOADS ON THE STIFFENERS AT LEVEL 0,00 m [kN] (+ = Compression)

AXIAL LOAD FOR EACH STIFFENER (kN):

Stiffener Id. Number

Wind Effect

Seismic Effect

CENTRAL Filling Effect

CENTRAL Discharge Effect

Dead and Permanent Loads

Snow

Probes

A

B

C

D

E

F

G

H

1

92,240

749,532

810,340

959,980

19,220

29,240

3,920

2

91,616

744,464

810,340

959,980

19,220

29,240

3,920

3

89,754

729,320

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Stiffeners Suggested Combinations (Unfactored):

L = C + F + G + H + D

M = B + F + G + H + E

N = F + B

Recommended Design Conditions for Slab calculation - [Guideline For Silo Foundation Design](#)

1) Combination Load L ⊕ PV1

Stationary Phase: Maximum pressure on silo bottom

Civil engineer must ensure the foundation settlements do not exceed:

2) Combination Load M ⊕ PV2

Dynamic Phase: Maximum friction on silo walls

- ω0,n ≤ 50mm (Maximum settlement)

3) Column F ⊕ PV3

Hydrostatic codition: No friction on silo walls

- ω' ≤ 2 ‰ (Angular distorsion)

4) Combination N (or Combination O)

Wind on empty silo: Maximum overturning moment