SYSTEM TIVAR® ENGINEERING
TURNKEY SOLUTIONS

MITSUBISHI CHEMICAL GROUP

System TIVAR® Engineering Linings Questionnaire

The following information are needed as a basis for the calculation of a lining solution. Please fill out the form as best as possible. The more detailed the project is known to us, the more accurately and quickly we can calculate:

Plant/Component:

☐ Hopper ☐ Silo ☐ Bunker ☐ Chute
☐ Tipper body ☐ Wheel loader bucket ☐ Wagon
☐ Other _____

Construction material:
☐ Steel ☐ Concrete ☐ Aluminium
☐ Other _____

Wall thickness (mm): _____

Existing lining: ☐ yes ☐ no
Type: _____
Thickness: _____

Location ☐ Inside ☐ Outside

Ambient temperature (°C):
max. _____
min. _____
Direct sunlight: ☐ yes ☐ no

Filling:
☐ continiously ☐ discontinuously
☐ centered ☐ decentered

Material clashes (temporarily) directly onto the wall surface?
Impact wear: ☐ yes ☐ no

Continuous material buffer in the plant?
☐ Yes ☐ No, with intermissions _____

Drop height (m): _____

Throughput (t/h): _____

Operating time (h/day): _____

Other remarks:
_____
_____
_____
_____

Bulk material:

Bulk material: _____

Particle size (mm): max. _____ min. _____

Particle form: ☐ round ☐ sharp-edged ☐ lignitic

Density (%): _____

Moisture content (%): _____

Bulk material temperature (°C): max. _____ min. _____

Other remarks:
_____
_____

Problem description:

Impact wear : ☐ yes ☐ no

Risk of explosion : ☐ yes ☐ no

Malfunction due to:
☐ Sticking ☐ Bridging ☐ Freezing
☐ Corrosion ☐ Segregation
☐ Other _____

Affected area:
☐ Hopper/slanted walls ☐ vertical walls
☐ Other _____

Resulting problems:
We would like to understand how a System TIVAR Engineering solution needs to perfom in order to be successful from your perspective. Please describe the current effects of the material flow disturbances you are experiencing (e.g. safety hazards; damage; quality problems; process limitation/interruptions; loss of production/downtime; scrap; costs due to unplanned repair and maintenance, cleaning, spare parts; emissions/ environmental risks; or similar):

Installation options:

Lift/Crane available on site: ☐ yes ☐ no

Accessibility for assembly:

☐ inspection opening ☐ manhole ☐ inlet/outlet

☐ Other _____

Special regulations: ☐ yes _____ ☐ no

Your contact details:

Company: _____

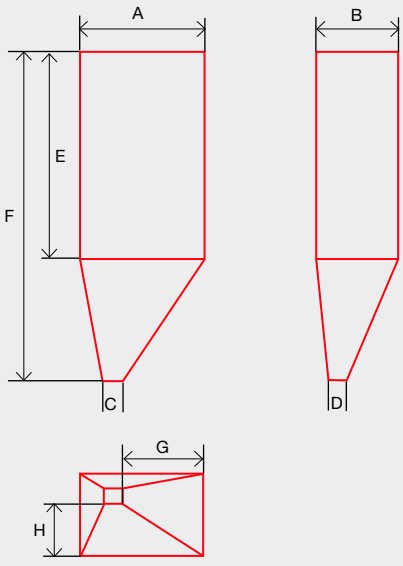
Contact: _____

Email: _____

Phone/ Mobile: _____

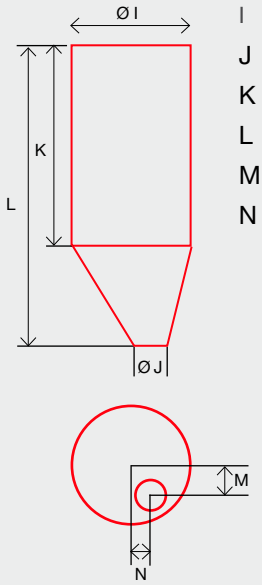
If drawings or sketches are not available please enter the dimensions in the following overview:

Bunker/ Silo
Rectangular/square



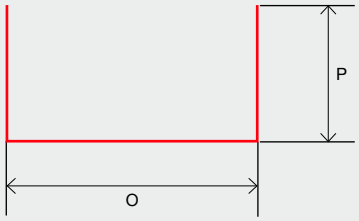
A (mm) _____
B (mm) _____
C (mm) _____
D (mm) _____
E (mm) _____
F (mm) _____
G (mm) _____
H (mm) _____

Bunker/ Silo
Cylindric



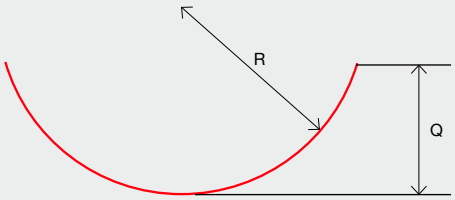
I (mm) _____
J (mm) _____
K (mm) _____
L (mm) _____
M (mm) _____
N (mm) _____

Throughs – Chutes
Rectangular square



O (mm) _____
P (mm) _____
Length _____
Slope _____

Throughs – Chutes
Round



Q (mm) _____
R (mm) _____
Length _____
Slope _____