

Approved: L. Marculescu

Checked: A. Popescu

Prepared: A. Boscornea

**Modernization of the modified starch production plant  
Request for information – Dryer calculation  
comments**

**Project Phase / Faza proiect: DDE**

**Project No./Proiect nr.: 2215PJ**

**Client/ Client: Agrana Starke Austria**

**Titular/ Owner: AGFD Tandarei**

**Site Location /Localizare șantier: Tandarei**

Revision	Date	Revision description
0	11.03.2026	First issue

PS-GEN-001-F04-REV.4.0

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### 1. COMMENTS LIST

Item No	Query/Comment	Reply
<b>Dryer Stress Report-02-26-2026</b>		
1	The duct was analysed as tubular piping elements, although the actual cross-section of the components is rectangular. How was the equivalence of these elements established from a structural-resistance standpoint, and what is the specific purpose of the stress analysis?	
2	Is the intention to verify the structural capacity of the duct elements, or only to check the loads transmitted to the equipment nozzles?	
3	The modelling equivalence and calculation assumptions must be clearly explained in the introductory sections of the report	
4	The information currently provided is not sufficient to understand how the input data and modelling approach were selected.	
5	P-red considered and confirmation, that no permanent deformation occurs is required.	
6	Equipment vibration effects are not considered in stress analysis. Please clarify if this effects are considered.	
<b>Flash Dryer Thickness Calculation- For Client-02-26-2026</b>		
1	There are no references to occasional loads such as wind, seismic, or snow loads.	
2	On the upper section of the duct, the snow load can be significant (Design snow load Normal exposure $S_k = 2.5$ kN/m <sup>2</sup> ), the overall installation height is considerable (35 m), and the wind exposure may also be important (The reference value of dynamic wind pressure $q_b = 0,6$ kPa, terrain category III).	
3	Given the size and height of the equipment, I believe that a seismic assessment is also required, especially for the supporting structure of the duct. To be discussed. (Acceleration of the ground for design $a_g = 0,25g$ , Control period (corner) $T_c = 1,0$ sec	
<b>Explosion Vent Calculation-2026-26-02</b>		
1	The report states that vent sizing was performed per <b>BS EN 14491</b> . Since the installation is in the EU (outside the UK), please <b>confirm that the current harmonized EN 14491 requirements</b> are applied (terminology, parameters, correction factors), and that any UK-specific deviations are <b>not</b> used. Provide the <b>exact edition/date of EN 14491</b> used and list any complementary standards (e.g., EN 1127-1, EN 14986, EN 14797 for vent devices, EN 15089 for flameless vents) considered in the methodology.	
2	The inputs in the report use $K_{st} = 147$ bar-m/s (St-1). Please demonstrate the validity of the vent sizing across the full	

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**Modernization of the modified starch production plant.**

Item No	Query/Comment	Reply
	<p>St-1 range up to Kst = 200 as discussed in the BOD review. Either:</p> <p>(a) re-run the vent sizing with Kst = 200 and confirm that the actual vent areas still exceed the required areas in all zones, or</p> <p>(b) justify, with calculation snapshots, that the installed vent area margin is sufficient to envelop Kst 200 without redesign.</p> <p>Include a short sensitivity table (A<sub>req</sub> vs. Kst at 147 / 170 / 200) for each protected volume/segment.</p>	
3	<p>The calculations appear to be prepared for bursting panels (classical venting). Please confirm explicitly whether the design basis is bursting panels or flameless vents on:</p> <p>(a) the ducting and hopper below the cyclones, and</p> <p>(b) the cyclone outlets and outlet duct sections.</p> <p>If flameless vents are intended anywhere, please provide the manufacturer's certified vent efficiency (K<sub>v</sub>, f<sub>eff</sub>), pressure drop curves, P<sub>stat</sub>, and mass/jet effects and update the A<sub>req</sub> accordingly, because flameless devices typically require a larger effective area than panels. If bursting panels are intended, clarify whether an explosion duct to a safe area is part of the scope and whether building pressurization / relief has been checked to prevent secondary damage (door blow-out, wall panels, etc.). State clearly which option is being delivered and update the drawings and BoM to match.</p>	
4	<p>The summary table shows required vs. provided vent areas for:</p> <p>(a) From Feed to Cyclones (A–G) → A<sub>req</sub> 4.01 m<sup>2</sup> vs. A<sub>prov</sub> 4.10 m<sup>2</sup>,</p> <p>(b) Cyclone inlets (H) → A<sub>req</sub> 0.26 m<sup>2</sup> vs. A<sub>prov</sub> 0.39 m<sup>2</sup>,</p> <p>(c) Cyclones + Outlet Duct → A<sub>req</sub> 4.15 m<sup>2</sup> vs. A<sub>prov</sub> 4.15 m<sup>2</sup>,</p> <p>(d) Outlet ducts to Hopper &amp; Hopper → A<sub>req</sub> 0.22 m<sup>2</sup> vs. A<sub>prov</sub> 0.38 m<sup>2</sup>.</p> <p>Please confirm that the P<sub>req</sub> used in vent sizing does not exceed the local MAWP of any duct/cyclone/hopper segment identified in the thickness report, i.e., that the "weakest section" logic has been enforced for every controlled volume. Provide a one-page cross-check that references the MAWP/MAEP per zone and the selected P<sub>stat</sub> and P<sub>req</sub>.</p>	

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Item No	Query/Comment	Reply
<b>Fan Calculation-03-01-2026</b>		
1	<p>Section 1.2 aggregates the total pressure drop into several terms and defines <math>\Delta P_{\text{misc}}</math> as the “pressure losses from miscellaneous equipment (cyclone, bag filter)”, but Table-2 / Figure-2 only list bends, flexible hoses, straight length; the numerical build-up for filter <math>\Delta P</math> is not shown, while p-cyclone is said to be inside p-misc. Please:</p> <ul style="list-style-type: none"> <li>(a) Itemize the <math>\Delta P</math> for each element (air filters—G4/F9 or final filters if any, coils/heat exchangers, dryer column, cyclones, silencers, dampers, after-filter ducting) with design flow 67,000 m<sup>3</sup>/h, actual air properties and fouling factors,</li> <li>(b) Show the clean / dirty <math>\Delta P</math> for the filter stage(s) and the selected design <math>\Delta P</math> used in the fan duty,</li> <li>(c) Reconcile the itemized sum with the stated Total Pressure Drop = 3,026 Pa and Fan Total Pressure = 6,052 Pa (including the stated pressure safety factor = 2.0). If the filter was only included implicitly in “p-misc”, please expose the underlying numbers or revise accordingly.</li> </ul>	
2	<p>No breakdown is given for clean vs. dirty filter <math>\Delta P</math> or fouling allowance. If the filter dirty <math>\Delta P</math> is added, verify that the duty point remains inside the fan stable zone with sufficient surge margin.</p>	
3	<p>The summary table shows Flow Safety Factor = 1.15, Pressure Safety Factor = 2.00, Fan Power = 190 kW, <math>\eta = 0.68</math>, <math>Q = 67,000 \text{ m}^3/\text{h}</math>, <math>\Delta P_{\text{tot}} = 6,052 \text{ Pa}</math>. Please attach the selected fan curve, indicate the operating point (<math>Q, P_t</math>) after safety factors, inlet/outlet system effects, and temperature/<math>\rho</math> corrections at 55–170 °C.</p>	
4	<p>Confirm motor sizing (service factor, VFD margin, altitude correction if any)</p>	