



Client and Application: Food Industrial

Roasting coffee involves exposing green coffee beans to high temperatures, triggering chemical reactions that enhance flavours and aromas. During roasting, the beans shed their outer skin, called chaff, which is typically removed through winnowing or sieving to ensure optimal flavour development and prevent bitterness in brewed coffee. Managing the removal of chaff is crucial to avoid creating ambers, which are small particles that pose fire hazards and can taint the coffee with undesirable flavours. To address this, a dust collection system is essential, designed to prevent embers from reaching the collector while ensuring efficient airflow and temperature control throughout the roasting process. Additionally, incorporating fire and explosion protection measures inside the facility and employing high-efficiency filtration systems can help maintain air quality, minimize energy consumption, and enhance overall safety during coffee processing.

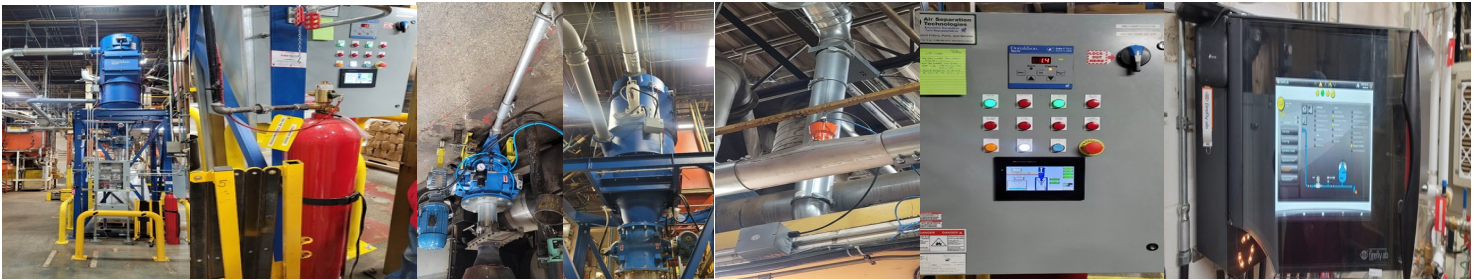
Solution:

The chosen solution involved implementing a high vacuum system. AST installed a TD-573 dust collector on each process side with a capacity of 1,100 CFM to capture and filter the chaff and dust produced during the roasting process. Additionally, the system includes an amber detector system and extinguishing system to prevent embers from entering the dust collector. Moreover, it features fire explosion protection and suppression systems, as well as a VFD control panel and pressure transducers to ensure constant flow, energy efficiency, and prolonged filter life.

Equipment:

- Two (2) TD-573 dust collectors.
- Two (2) MD-12 airlock valves at the dust collector hopper outlet.
- Two (2) NT55202 Multistage centrifugal air exhausters, 20 HP.
- Two (2) High performance silencers.
- Two (2) AST-CP-20HP-575V control panels.
- Two (2) FireFly spark detection systems and accessories.
- Two (2) Fike explosion suppression systems.
- Two (2) FireTrace CO2 fire protection assemblies.
- Sixteen (16) MD-8 airlock valves to isolate the roasters.

Installation pictures:



Contact:

For an update on the performance of the system, please contact:

Amir Fard, Sales Application Engineer
Air Separation Technologies Inc.

www.astgroup.ca, amir.fard@astgroup.ca, Tel: 647-401-3093