



# Buying an Enclosed Combustor? Why the Regulations are Important!

The Enclosed Combustor is an emission reduction technology that offers complete combustion with no visible flame. Unlike a flare stack and incinerator, an Enclosed Combustors can be within 10 meters of other process equipment. This is an enormous benefit to operators who have been struggling with a lack of available land and lease space. To allow a combustion device that close to potentially other ignitable sources, there are strict regulatory design that must be followed to ensure everyone's safety. It is important to remember that combustion can be dangerous and if not handled properly could lead to loss of lives and property. Thus, these regulations are not a friendly suggestion, but a **requirement** to ensure operators safety and that the facility is a safe worksite.

### What makes the Enclosed Combustor viable for use within 10 meters spacing?

Below is a AER's 7.1.3 *Design and Operating Parameters for Enclosed Combustors* and a summary on why each parameter is crucial:

What is the AER Regulation?	Why it is important
Combustion process must be totally enclosed, except for the combustion air intake and the exhaust discharge	With the section of combustion entirely closed, there are no chances for ingress of vent gases or chemical compounds in the area, that are dispersed that would encounter the combustion chamber.
There must be no visible flame.	With the flames being enclosed (i.e., not visible), there would also be no ignition of dispersed or leaked vent gas.
All surfaces exposed to the atmosphere <b>must:</b> a) operate below the temperature that would ignite a flammable substance present in the surrounding area, or b) be shielded or blanketed in such a way to prevent a flammable substance present in the surrounding area from contacting the surface	Also surfaces that are exposed or could be exposed to leaked vent gases are shielded to prevent flammable substances from encountering the surface. We enclosed the top section of the enclosed combustor, to ensure that there is possible entry point for flammable substances,
Exhaust gases must be below auto-ignition temperature of a flammable substance present in the surrounding area	If at the top of the stack the autoignition temperature is kept below that of gasses on site, you eliminate the chances of the exhaust gas being an ignition source of gases in the area.
All intakes must be equipped with a flame arresting device.	Air is needed for combustion of gas. As air is introduced into the combustion device, it could also drag in vent gasses, tanks, trucks, lose fitting that are leaking on site or dispersed in the area. The flame arrester acts as a safety to swiftly quenches flame propagation.





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## **What should I look out for when vetting an Enclosed Combustor?**

- Can I visibly inspect that the combustion chamber is closed?
- Is there any visible flame while its operating?
- Are all areas that could potentially encounter flammable substances even at the stack top, closed or shielded?
- Is the auto-ignition temperature below that of the noted gasses in the area?
- What gas am I burning? Given that H<sub>2</sub>S requires 600 deg C at the stack top, is a close spaced unit (enclosed combustor) the best equipment for this job?
- Are the air intakes fitted with a flame arrester?

**If any of the above answers is No. Then buying that Enclosed Combustor may be a safety risk to the facility and operators on site.**

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