

What is a “header” and how are plant operating permits classed?

A header transfers a heat transfer medium (water, steam, oil, etc.), typically via pipe(s), between (one or more) boilers and (one or more) points where the heat is required. A header can connect a single boiler to a single point where heat is needed.

If the capacity of a single boiler cannot provide enough heat transfer medium at the desired temperature and pressure, it may be necessary to connect multiple boilers to the same header.

The [Power Engineers, Boiler, Pressure Vessel and Refrigeration Safety Regulation](#) (“the regulation”) associates the plant operating requirements for a header to the total heat receiving surface [m²] to which the heat transfer medium in that header is exposed. The regulation then specifies plant classifications for the total heat receiving surface [m²] on a given type of header.

If there are multiple headers on the same premises, the regulation requires the plant operating permit to be the same classification as the header with the highest classification (lowest assigned number). The premises then has to be staffed and managed according to the classification on the plant operating permit.

Examples of how to determine plant operating permit classification

As illustrated by the examples, the premises, the header heat receiving surface [m²], and the header type determine the plant operating permit classification, and not the buildings.

The [Safety Standards Act](#) and regulations specify broader requirements beyond the descriptions and examples provided in this section. The descriptions and examples are provided solely and exclusively to address common misconceptions about headers and plant operating permit classification.

Clients are encouraged to submit their individual plant operating permit applications, which will be assessed on a case by case basis according to broader requirements that fall beyond the scope of this discussion.

SCENARIO 1: There are 3 premises, each with one boiler on each of the premises.

Premises	Building	Header	m ²	Header Type / Boiler Type	Header m2	Header classification
X	A	1	45	High Pressure Steam Boiler	45	5 th class
Y	B	2	8	High Pressure Steam Boiler	8	Exempt
Z	C	3	75	High Pressure Steam Boiler	75	4 th class

Answer: Premises X requires a 4th Class plant operating permit due to header 1. Premises Y does not require a plant operating permit. Premises Z requires a 4th class plant operating permit due to header 3.

SCENARIO 2: There are 3 separate buildings on a single premises. There is only one boiler in each building, supplying its own building only:

Premises	Building	Header	m2	Header Type / Boiler Type	Header m2	Header classification
X	A	1	45	High Pressure Steam Boiler	45	5 th class
	B	2	8	High Pressure Steam Boiler	8	Exempt
	C	3	75	High Pressure Steam Boiler	75	4 th class

Answer: One 4th class plant operating permit is required for premises X due to header 3.

SCENARIO 3: There are 3 separate headers on one premises. There are 2 boilers per header.

Premises	Building	Header	m2	Header Type / Boiler Type	Header m2	Header classification
X	A	1	45	High Pressure Steam Boiler	70	4 th class
			25	High Pressure Steam Boiler		
	B	2	20	High Pressure Steam Boiler	40	5 th class
			20	High Pressure Steam Boiler		
	C	3	75	High Pressure Steam Boiler	125	3 rd class
			50	High Pressure Steam Boiler		

Answer: One 3rd class plant operating permit is required for premises X due to header 3.

SCENARIO 4: There is one building on one premises. There are 3 headers, with 2 boilers per header connected to one another.

Premises	Building	Header	m2	Header Type / Boiler Type	Header m2	Header classification
X	A	1	45	High Pressure Steam Boiler	70	4 th class
			25	High Pressure Steam Boiler		
		2	20	High Pressure Steam Boiler	40	5 th class
			20	High Pressure Steam Boiler		
		3	75	High Pressure Steam Boiler	125	3 rd class
			50	High Pressure Steam Boiler		

Answer: One 3rd class plant operating permit is required for premises X due to header 3.

SCENARIO 5: There is one building on one premises. There are 3 headers, with 2 boilers per header connected to one another. Different headers are of different plant types.

Premises	Building	Header	m2	Header Type / Boiler Type	Header m2	Header classification
X	A	1	45	High Pressure Steam Boiler	70	4 th class
			25	High Pressure Steam Boiler		
		2	20	Steam Heating Plant	40	5 th class
			20	Steam Heating Plant		
		3	75	Fluid Heating Plant	125	Exempt
			50	Fluid Heating Plant		

Answer: One 4th class plant operating permit is required for premises X due to header 1.