

How to design a gas cylinder with NextGen

In this article we illustrate the precautions to be taken when calculating a gas cylinder.

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Gas cylinders are usually designed according to ISO 9809. This code, however, doesn't cover some rules to design and validate openings or fatigue: in these cases, it is necessary to integrate the calculation with a separate validation using a pressure equipment code like EN 13445 or AD 2000; this is easily achievable using NextGen using the following bits of advice.

Main body can be designed as a simple cylindrical shell. Subsequently, top and bottom heads shall be added, usually using component "hemispherical head". Since inside diameter, outside diameter and thickness may not match between cylinder and head components may show a step or offset. This is perfectly legitimate for what it concerns the calculation.



It is now possible to add opening or openings on vessel's heads.

Whenever a modification of geometry is needed, the user shall take into account that by default NextGen keeps vessel's geometry consistent: this behavior can be disabled under Tools > Options > Components > Enable geometric relationships between components.