|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **平盖中心接管大开孔(ρ≥0.5)计算** | | | | | 计算单位 |  | | | |
| 计算所依据的标准 | | | | | | **GB/T 150.3-2011** | | | |
| **计 算 条 件** | | | | | | **简 图** | | | |
| 设计压力, Pd | | | | MPa |  | 1  1  1  1  1  1  1  1  1 | | | |
| 设计温度, t | | | | ℃ |  |
| 介质静压力, Ps | | | | MPa |  |
| 压力试验类型 | | | |  | |
| 圆 筒 | 材料标准号 | | |  | |
| 材料牌号/名称 | | |  | |
| 内直径, Dsi | | | mm |  |
| 名义厚度, δsn | | | mm |  |
| 颈部大端厚度, δsrn | | | mm |  |
| 颈部高度, hsn | | | mm |  |
| 腐蚀裕量, Cs2 | | | mm |  |
| 焊接接头系数, φs | | | / |  |
| 平 盖 | 材料标准号 | | |  | |
| 材料牌号/名称 | | |  | |
| 名义厚度, δcn | | | mm |  |
| 腐蚀裕量, Cc2 | | | mm |  |
| 焊接接头系数, φc | | | / |  |
| 接 管 | 材料标准号 | | |  | |
| 材料牌号/名称 | | |  | |
| 外直径, dpo | | | mm |  |
| 名义厚度, δpn | | | mm |  |
| 颈部大端厚度, δprn | | | mm |  |
| 颈部高度, hpn | | | mm |  |
| 腐蚀裕量, Cp2 | | | mm |  |
| 焊接接头系数, φp | | | / |  |
| **材 料 特 性** | | | | | | | | | |
| 筒 体 | 密度, ρs | | | kg/m³ |  | 平 盖 | 密度, ρc | kg/m³ |  |
| 试验温度下屈服点, RseL | | | MPa |  | 试验温度下屈服点, RceL | MPa |  |
| 材料负偏差, Cs1 | | | mm |  | 材料负偏差, Cc1 | mm |  |
| 设计温度许用应力, [σ]st | | | MPa |  | 设计温度许用应力, [σ]ct | MPa |  |
| 试验温度许用应力, [σ]s | | | MPa |  | 试验温度许用应力, [σ]c | MPa |  |
| 抗拉/屈服控制应力, [σ]st1 | | | MPa |  | 抗拉/屈服控制应力, [σ]ct1 | MPa |  |
| 接管 | 密度, ρp | | | kg/m³ |  | 设计温度许用应力, [σ]pt | | MPa |  |
| 试验温度下屈服点, RpeL | | | MPa |  | 试验温度许用应力, [σ]p | | MPa |  |
| 材料负偏差, Cp1 | | | mm |  | 抗拉/屈服控制应力, [σ]pt1 | | MPa |  |
| **过 程 参 数** | | | | | | | | | |
| 计算压力, Pc | | | MPa | |  | | | |  |
| 筒体 | 厚度附加量, Cs | | | mm | Cs = Cs1 + Cs2 | | | |  |
| 有效厚度, δse | | | mm |  | | | |  |
| 外直径, Dso | | | mm |  | | | |  |
| 与平盖连接处 | 系数, K | | / |  | | | |  |
| 系数, T | | / |  | | | |  |
| 系数, U | | / |  | | | |  |
| 系数, Y | | / |  | | | |  |
| 系数, Z | | / |  | | | |  |
| 系数, h0 | | mm |  | | | |  |
| 整体法兰系数, FI | | / | 按表7-7计算 | | | |  |
| 系数, VI | | / | 按表7-7计算 | | | |  |
| 应力校正系数, f | | / | 按表7-7计算 | | | |  |
| 平盖 | 厚度附加量, Cc | | | mm | Cc = Cc1 + Cc2 | | | |  |
| 有效厚度, δce | | | mm |  | | | |  |
| 接管 | 厚度附加量, Cp | | | mm | Cp = Cp1 + Cp2 | | | |  |
| 有效厚度, δpe | | | mm |  | | | |  |
| 开孔直径, dop | | | mm |  | | | |  |
| 中面直径, dpm | | | mm | dpm = dpo – δpn | | | |  |
| 与平盖连接处 | 系数, K | | / |  | | | |  |
| 系数, T | | / |  | | | |  |
| 系数, U | | / |  | | | |  |
| 系数, Y | | / |  | | | |  |
| 系数, Z | | / |  | | | |  |
| 系数, h0 | | mm |  | | | |  |
| 整体法兰系数, FI | | / | 按表7-7计算 | | | |  |
| 系数, VI | | / | 按表7-7计算 | | | |  |
| 应力校正系数, f | | / | 按表7-7计算 | | | |  |
| **平盖计算及校核** | | | | | | | | | |
| 计算力矩 | 力臂, SD | | | mm |  | | | |  |
| 作用力, FD | | | N |  | | | |  |
| 力臂, ST | | | mm |  | | | |  |
| 作用力, FT | | | N |  | | | |  |
| 计算力矩, Mo | | | N·mm |  | | | |  |
| 计算应力 | 参数, d1 | | | / |  | | | |  |
| 参数, e | | | / |  | | | |  |
| 系数, λ | | | / |  | | | |  |
| 法兰颈部轴向应力, σH | | | MPa |  | | | |  |
| 法兰环径向应力, σR | | | MPa |  | | | |  |
| 法兰环切向应力, σT | | | MPa |  | | | |  |
| 应力校核 |  | | | MPa |  | | | |  |
|  | | | / |  | | | |  |
|  | | | MPa |  | | | |  |
|  | | | / |  | | | |  |
|  | | | MPa |  | | | |  |
|  | | | / |  | | | |  |
| **平盖与圆筒连接处应力计算及校核** | | | | | | | | | |
| 计算内直径, Di1 | | | | mm |  | | | |  |
| 参数, (Eθ) | | | | MPa |  | | | |  |
| 平盖外径与  圆筒连接处的力矩, MH | | | | N·mm |  | | | |  |
| 参数, x1 | | | | / |  | | | |  |
| 圆筒颈部轴向应力, σHs | | | | MPa |  | | | |  |
| 平盖外径处径向应力, σRs | | | | MPa |  | | | |  |
| 平盖外径处径向应力, σTs | | | | MPa |  | | | |  |
| 应力校核 |  | | | MPa |  | | | |  |
|  | | | / |  | | | |  |
|  | | | MPa |  | | | |  |
|  | | | / |  | | | |  |
|  | | | MPa |  | | | |  |
|  | | | / |  | | | |  |
| **平盖开孔处应力计算及校核** | | | | | | | | | |
| 系数, Z2 | | | | / |  | | | |  |
| 接管颈部轴向应力, σHo | | | | MPa |  | | | |  |
| 平盖径向应力, σRo | | | | MPa |  | | | |  |
| 平盖环向应力, σTo | | | | MPa |  | | | |  |
| 应力校核 |  | | | MPa |  | | | |  |
|  | | | / |  | | | |  |
|  | | | MPa |  | | | |  |
|  | | | / |  | | | |  |
|  | | | MPa |  | | | |  |
|  | | | / |  | | | |  |
| **压 力 试 验** | | | | | | | | | |
| 试压系数 | | | | / |  | | | |  |
| 接管试验压力值, PpT | | | | MPa | PpT = η×Pd×[σ]p/max{[σ]pt , [σ]pt1} | | | |  |
| 平盖试验压力值, PcT | | | | MPa | PcT = η×Pd×[σ]c/max{[σ]ct , [σ]ct1} | | | |  |
| 筒体试验压力值, PsT | | | | MPa | PsT = η×Pd×[σ]s/max{[σ]st , [σ]st1} | | | |  |
| 取用试验压力, PT | | | | MPa |  | | | |  |