|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **内压弯头强度校核** | | | 计算单位 |  | | |
| 计算所依据的标准 | | | | **HG/T 20582-2011** | | |
| **计 算 条 件** | | | | **弯 头 简 图** | | |
| 设计压力, Pd | | MPa | **$$001** | $06  $08  $07  弯制  直管  弯头 | | |
| 设计温度, t | | ℃ | **$$002** |
| 静压力, Ps | | MPa | **$$003** |
| 材料标准号 | | **$$004** | |
| 材料牌号/名称 | | **$$005** | |
| 管子外直径, Dw | | mm | **$$006** |
| 弯头中心线曲率半径, R | | mm | **$$007** |
| 直管名义厚度, δn | | mm | **$$008** |
| 腐蚀裕量, C2 | | mm | **$$009** |
| 焊接接头系数, φ | | / | **$$010** |
| 压力试验类型 | | **气压试验** | |
| **材 料 特 性** | | | | | | |
| 密度, ρ | | kg/m³ | **$$012** | 设计温度许用应力, [σ]t | MPa | **$$015** |
| 试验温度下屈服点, ReL | | MPa | **$$013** | 试验温度许用应力, [σ] | MPa | **$$016** |
| 材料负偏差，C1 | | mm | **$$014** |  | | |
| **内 压 强 度 校 核** | | | | | | |
| 计算压力, Pc | MPa | | Pc = Pd + Ps | | | **$$018** |
| 管子厚度最大负偏差, m | | % | m = 100×C1/δn | | | **$$019** |
| 系数, n | | / | n = R/Dw | | | **$$020** |
| 系数, A1 | | / | 根据 n、m查表 21.2 | | | **$$021** |
| 厚度附加量，C | | mm | C = A1δn + C2 | | | **$$022** |
| 直管理论计算厚度, δ0 | | mm |  | | | **$$023** |
| 直管所需厚度, δ | | mm | δ = δ0 + C | | | **$$024** |
| 厚度校核 | | / | δ <= δn | | | **$$025** |
| **MAWP 计算** | | | | | | |
| 最大允许工作压力, Pmawp | | MPa |  | | | **$$026** |
| **试 验 压 力** | | | | | | |
| 试验压力值，PT | | MPa | PfT = max{1.10×Pd×[σ]/[σ]t, 0.05} | | | **$$027** |

注：本表计算仅包括由直管在平面弯曲的光滑圆管，不包括铸造弯头、U形换热器管以及由专用机械热压成形的弯头。