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| --- | --- | --- | --- | --- | --- |
| **内压圆筒校核** | | 计算单位 |  | | |
| 计算所依据的标准 | | | **NB/T 47003.1-2009** | | |
| **计 算 条 件** | | | **筒 体 简 图** | | |
| 设计压力，Pd | MPa | **$$001** | $03  $01  $02 | | |
| 设计温度，t | ℃ | **$$002** |
| 静压力，Ps | MPa | **$$003** |
| 圆筒内直径，Di | mm | **$$004** |
| 圆筒长度，L | mm | **$$005** |
| 名义厚度，δn | mm | **$$006** |
| 材料标准号 | **$$007** | |
| 材料牌号/名称 | **$$008** | |
| 腐蚀裕量，C2 | mm | **$$009** |
| 焊接接头系数，φ | / | **$$010** |
| 压力试验类型 | **液压试验** | |
| **材 料 特 性** | | | | | |
| 密度，ρ | kg/m³ | **$$011** | 设计温度许用应力，[σ]t | MPa | **$$012** |
| 试验温度下屈服点，ReL | MPa | **$$013** | 试验温度许用应力，[σ] | MPa | **$$014** |
| 材料负偏差，C1 | mm | **$$015** | / | | |
| **内 压 强 度 校 核** | | | | | |
| 厚度附加量，C | mm | C = C1 + C2 | | | **$$016** |
| 有效厚度，δe | mm |  | | | **$$017** |
| 计算压力，Pc | MPa | Pc = Pd + Ps | | | **$$018** |
| 计算厚度，δ | mm |  | | | **$$019** |
| 最小厚度，δmin | mm |  | | | **$$020** |
| 设计厚度，δd | mm | δd = max{δ, δmin} + C2 | | | **$$021** |
| 厚度校核 | / | δn ≥ δd+ C1 | | | **$$022** |
| 圆筒实际应力，σt | MPa |  | | | **$$023** |
| 许用应力 | MPa | [σ]tφ | | | **$$024** |
| 应力校核 | / | σt <= [σ]tφ | | | **$$025** |
| **压 力 试 验** | | | | | |
| 试验压力值，PT | MPa | PT = max{1.25×Pd×[σ]/[σ]t, 0.05} | | | **$$026** |
| 试验时实际应力，σT | MPa |  | | | **$$027** |
| 许用应力，[σ]T | MPa | [σ]T= 0.9×ReL×φ | | | **$$028** |
| 应力校核 | / | σT <= [σ]T | | | **$$029** |
| **MAWP** | | | | | |
| 最大允许工作压力，MAWP | MPa |  | | | **$$030** |
| **几 何 特 性** | | | | | |
| 内表面积，AI | m2 | **$$031** | 内容积，VI | m3 | **$$032** |
| 外表面积，AO | m2 | **$$033** | 重量，m | kg | **$$034** |