|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **矩形法兰内压强度校核** | | | | 计算单位 | |  | | |
| 计算所依据的标准 | | | | | | **NB/T 47003.1-2009** | | |
| **计 算 条 件** | | | | | | **简 图** | | |
| 设计压力, Pd | | | MPa | **$$001** | | $05  $10  $11  $14  $19  $18  $16  $17  $19  $11 | | |
| 设计温度, t | | | °C | **$$002** | |
| 介质静压力, Ps | | | MPa | **$$003** | |
| 垫片 | 材料 | | **$$004** | | |
| 短边螺栓外侧距离, Dg | | mm | **$$005** | |
| 螺 栓 | 材料标准号 | | **$$006** | | |
| 材料牌号/名称 | | **$$007** | | |
| 螺栓公称直径, db | | mm | **$$008** | |
| 无螺纹部分最小直径, dm | | mm | **$$009** | |
| 短边截面螺栓中心距, Db | | mm | **$$010** | |
| 相邻螺栓间距, LF | | mm | **$$011** | |
| 法 兰 | 材料标准号 | | **$$012** | | |
| 材料牌号/名称 | | **$$013** | | |
| 名义厚度, δn | | mm | **$$014** | |
| 腐蚀裕量, Cf2 | | mm | **$$015** | |
| 螺栓至焊缝间距, LA | | mm | **$$016** | |
| 螺栓至法兰外壁间距, Le | | mm | **$$017** | |
| 螺栓至法兰内壁间距, LD | | mm | **$$018** | |
| 短边截面内侧距离, Di | | mm | **$$019** | |
| 压力试验类型 | | | **$$020** | | |
| **材 料 特 性** | | | | | | | | |
| 法 兰 | | | | | 螺 栓 | | | |
| 密度, ρf | | | kg/m³ | **$$021** | | 密度, ρb | kg/m³ | **$$026** |
| 试验温度下屈服点, RfeL | | | MPa | **$$022** | | 试验温度下屈服点, RbeL | MPa | **$$027** |
| 设计温度许用应力, [σ]ft | | | MPa | **$$023** | | 设计温度许用应力, [σ]bt | MPa | **$$028** |
| 试验温度许用应力, [σ]f | | | MPa | **$$024** | | 试验温度许用应力, [σ]b | MPa | **$$029** |
| 材料负偏差, Cf1 | | | mm | **$$025** | | 材料负偏差, Cb1 | mm | **$$030** |
| 垫片 | 系数, m | | / | 查表 6-7 | | | | **$$031** |
| 比压力, y | | MPa | 查表 6-7 | | | | **$$032** |
| **过 程 参 数** | | | | | | | | |
| 计算压力, Pc | | | MPa |  | | | | **$$033** |
| 法兰厚度附加量, Cf | | | mm |  | | | | **$$034** |
| 法兰有效厚度, δf | | | mm |  | | | | **$$035** |
| 短边截面外侧密封距离, D | | | mm |  | | | | **$$036** |
| 垫片基本密封宽度, bo | | | mm |  | | | | **$$037** |
| **垫 片** | | | | | | | | |
| 预 紧 状 态 | | | | | 操 作 状 态 | | | |
| 有效密封宽度, | | | mm | **$$038** | 有效密封宽度, | | mm | **$$040** |
| 最小压紧力, | | | N | **$$039** | 最小压紧力, | | N | **$$041** |
| **螺 栓** | | | | | | | | |
| 螺栓最小间距, LFmin | | mm | | 查表 6-8 | | | | **$$042** |
| 螺栓最大间距, LFmax | | mm | |  | | | | **$$043** |
| 螺栓间距校核 | | / | |  | | | | **$$044** |
| 预 紧 状 态 | | | | | | | | |
| 螺栓载荷, Wa | | | N |  | | | | **$$045** |
| 所需螺栓面积, Aa | | | mm2 |  | | | | **$$046** |
| 操 作 状 态 | | | | | | | | |
| 距离, LT | | | mm |  | | | | **$$047** |
| 距离, Lp | | | mm |  | | | | **$$048** |
| 距离, LR | | | mm |  | | | | **$$049** |
| 流体轴向力, FD | | | N |  | | | | **$$050** |
| F与FD之差, FT | | | N |  | | | | **$$051** |
| 平衡轴向力, FR | | | N |  | | | | **$$052** |
| 流体轴向力, F | | | N |  | | | | **$$053** |
| 螺栓载荷, Wp | | | N |  | | | | **$$054** |
| 所需螺栓面积, Ap | | | mm2 |  | | | | **$$055** |
| 螺 栓 面 积 校 核 | | | | | | | | |
| 所需螺栓面积, Am | | | mm2 |  | | | | **$$056** |
| 螺纹小径, dmin | | | mm | 查螺纹标准 | | | | **$$057** |
| 实际截面积, Ab | | | mm2 |  | | | | **$$058** |
| 螺栓面积校核 | | | / |  | | | | **$$059** |
| **法 兰** | | | | | | | | |
| 螺栓至焊缝最小距离, LAmin | | | mm | 查表 6-8 | | | | **$$060** |
| LA校核 | | | / |  | | | | **$$061** |
| 螺栓外侧最小距离, Lemin | | | mm | 查表 6-8 | | | | **$$062** |
| Le校核 | | | / |  | | | | **$$063** |
| 法兰设计力矩, Mo | | | N·mm |  | | | | **$$064** |
| 法兰计算厚度, δfc | | | mm |  | | | | **$$065** |
| 厚度校核 | | | / |  | | | | **$$066** |
| **压 力 试 验** | | | | | | | | |
| 试压系数, η | | | / |  | | | | **$$067** |
| 法兰试验压力, PfT | | | MPa |  | | | | **$$068** |
| 螺栓试验压力, PbT | | | MPa |  | | | | **$$069** |
| 试验压力, PT | | | MPa |  | | | | **$$070** |