|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **填料支承梁校核** | | | 计算单位 | |  | | | |
| 计算所依据的标准 | | | | | **SH/T 3098-2011、GB 50017-2003** | | | |
| **计 算 条 件** | | | | | **计 算 简 图** | | | |
| 设计温度, t | | °C | **$$001** | | $12  集中载荷 1000N  $08  $08  $09  $10  $11  均布载荷  集中载荷 1000N  L/3  L/3 | | | |
| 填料质量, m1 | | kg | **$$002** | |
| 填料持液量, m2 | | kg | **$$003** | |
| 格栅质量, m3 | | kg | **$$004** | |
| 支承梁材料标准号 | | **$$005** | | |
| 支承梁材料名称/牌号 | | **$$006** | | |
| 支承梁腐蚀裕量, C2 | | mm | **$$007** | |
| 几何数据 | 横板厚度, δhn | mm | **$$008** | |
| 竖板厚度, δvn | mm | **$$009** | |
| 宽度, Wn | mm | **$$010** | |
| 高度, H | mm | **$$011** | |
| 梁(最大)跨度, L | mm | **$$012** | |
| 支承梁数量, n | | / | **$$100** | |
| **材 料 特 性** | | | | | | | | |
| 横 板 | 材料负偏差, Ch1 | mm | **$$013** | | 竖板 | 材料负偏差, Cv1 | mm | **$$019** |
| 常温许用应力, [σ]h | MPa | **$$014** | | 常温许用应力, [σ]v | MPa | **$$020** |
| 设计温度许用应力, [σ]ht | MPa | **$$015** | | 设计温度许用应力, [σ]vt | MPa | **$$021** |
| 设计温度屈服点, | MPa | **$$016** | | 设计温度屈服点, | MPa | **$$022** |
| 密度, ρ | | kg/m³ | **$$017** | 设计温度弹性模量, Et | | | 10³×MPa | **$$023** |
| **过 程 参 数** | | | | | | | | |
| 不均匀系数, k | | / |  | | | | | **$$101** |
| 重力加速度, g | | m/s2 | g = 9.8 | | | | | **9.8** |
| 横板厚度附加量, Ch | | mm | Ch = 2C2 + Ch1 | | | | | **$$025** |
| 横板有效厚度, δhe | | mm | δhe = δhn - Ch | | | | | **$$026** |
| 竖板厚度附加量, Cv | | mm | Cv = 2C2 + Cv1 | | | | | **$$027** |
| 竖板有效厚度, δve | | mm | δve = δvn – Cv | | | | | **$$028** |
| 梁有效宽度, We | | mm | We = Wn – 2×C2 | | | | | **$$029** |
| 梁有效高度, He | | mm | He = H - 2×C2 - 2Ch1 | | | | | **$$030** |
| 梁的质量, m4 | | kg |  | | | | | **$$031** |
| 梁截面轴惯性矩, J | | mm4 |  | | | | | **$$032** |
| 抗弯截面模数, W | | mm3 |  | | | | | **$$033** |
| 梁的常温取用应力, [σ] | | MPa | [σ] = min{[σ]h, [σ]v} | | | | | **$$034** |
| 梁设计温度取用应力, [σ]t | | MPa | [σ]t = min{[σ]ht, [σ]vt} | | | | | **$$035** |
| 梁设计温度取用屈服点, | | MPa | = min{, } | | | | | **$$036** |
| **操 作 工 况 强 度 校 核** | | | | | | | | |
| 填料质量均布载荷, q1 | | N/mm | q1 = m1g/L | | | | | **$$037** |
| 填料持液量均布载荷, q2 | | N/mm | q2 = m2g/L | | | | | **$$038** |
| 格栅质量均布载荷, q3 | | N/mm | q3 = m3g/L | | | | | **$$039** |
| 梁的质量均布载荷, q4 | | N/mm | q4 = m4g/L | | | | | **$$040** |
| 总均布载荷, q | | N/mm |  | | | | | **$$041** |
| 最大弯矩, | | N·mm |  | | | | | **$$042** |
| 弯曲应力, σt | | MPa |  | | | | | **$$043** |
| 应力校核 | | / |  | | | | | **$$044** |
| 挠度, y | | mm |  | | | | | **$$045** |
| 梁的许用挠度, [y] | | mm |  | | | | | **$$046** |
| 挠度校核 | | / | y <= [y] | | | | | **$$047** |
| **操 作 工 况 整 体 稳 定 性 校 核** | | | | | | | | |
| 参数, ξ | | / |  | | | | | **$$048** |
| 等效临界弯矩系数, βb | | / |  | | | | | **$$049** |
| 梁的侧向长细比, λy | | / |  | | | | | **$$050** |
| 梁截面积, A | | mm2 |  | | | | | **$$051** |
| 计算整体稳定系数, Φb | | / |  | | | | | **$$052** |
| 取用稳定系数, Φ | | / |  | | | | | **$$053** |
| 计算应力, σbt | | MPa |  | | | | | **$$054** |
| 应力校核 | | / |  | | | | | **$$055** |
| **安 装 / 检 修 工 况 强 度 校 核** | | | | | | | | |
| 集中载荷, F | | N | 梁两端1/3处各作用1000 N 的集中载荷 | | | | | **1000** |
| 最大弯矩, Mmax | | N·mm |  | | | | | **$$057** |
| 弯曲应力, σ | | MPa |  | | | | | **$$058** |
| 应力校核 | | / |  | | | | | **$$059** |