

## CODE

**25.9.2 Required strength**

**25.9.2.1** Factored prestressing force at the anchorage device,  $P_{pu}$ , shall exceed the least of (a) through (c), where 1.2 is the load factor from 5.3.12:

- (a)  $1.2(0.94f_{py})A_{ps}$
- (b)  $1.2(0.80f_{pu})A_{ps}$
- (c) Maximum jacking force designated by the supplier of anchorage devices multiplied by 1.2

**25.9.3 Local zone**

**25.9.3.1** The design of local zone in post-tensioned anchorages shall meet the requirements of (a), (b), or (c):

- (a) Monostrand or single 16 mm or smaller diameter bar anchorage devices shall meet the bearing resistance and local zone requirements of ACI 423.7
- (b) Basic multistrand anchorage devices shall meet the bearing resistance requirements of AASHTO LRFD Bridge Design Specifications, Article 5.8.4.4.2, except that the load factors shall be in accordance with 5.3.12 and  $\phi$  shall be in accordance with 21.2.1
- (c) Special anchorage devices shall satisfy the tests required in AASHTO LRFD Bridge Design Specifications, Article 5.8.4.4.3, and described in AASHTO LRFD Bridge Construction Specifications, Article 10.3.2.3

**25.9.3.2** Where special anchorage devices are used, supplementary skin reinforcement shall be provided in addition to the confining reinforcement specified for the anchorage device.

**25.9.3.2.1** Supplementary skin reinforcement shall be similar in configuration and at least equivalent in volumetric ratio to any supplementary skin reinforcement used in the qualifying acceptance tests of the anchorage device.

**25.9.4 General zone**

## COMMENTARY

intermediate stages during construction. The most critical bursting forces caused by each of the sequentially post-tensioned tendon combinations, as well as that of the entire group of tendons, should be taken into account.

**R25.9.2 Required strength**

**R25.9.2.1** The factored prestressing force is the product of the load factor and the maximum prestressing force permitted. The maximum permissible tensile stresses during jacking are defined in 20.3.2.5.1.

**R25.9.3 Local zone**

The local zone resists very high local stresses introduced by the anchorage device and transfers them to the remainder of the anchorage zone. The behavior of the local zone is strongly influenced by the specific characteristics of the anchorage device and its confining reinforcement, and is less influenced by the geometry and loading of the overall structure. Local-zone design sometimes cannot be completed until specific anchorage devices are selected. If special anchorage devices are used, the anchorage device supplier should furnish test information to demonstrate that the device is satisfactory under Article 10.3.2.3 of the AASHTO LRFD Bridge Construction Specifications (LRFD CONS) and provide information regarding necessary conditions for use of the device. The main considerations in local-zone design are the effects of high bearing pressure and the adequacy of any confining reinforcement provided to increase concrete bearing resistance.

**R25.9.3.2.1** Skin reinforcement is placed near the outer faces in the anchorage zone to limit local crack width and spacing. Reinforcement in the general zone for other actions (such as shrinkage and temperature) may be used in satisfying the supplementary skin reinforcement requirement. Determination of the supplementary skin reinforcement depends on the anchorage device hardware used and frequently cannot be determined until the specific anchorage devices are selected.

**R25.9.4 General zone**

Within the general zone, the assumption that plane sections remain plane is not valid. Tensile stresses that can be caused by the tendon anchorage device, including bursting, spalling, and edge tension, as shown in Fig. R25.9.4, should be considered