1. Snell standards (American)
    a. Four elements of a helmet are tested: Impact management, helmet positional stability, retention system strength, and extent of protection. Testing for each of these four criteria are presented and described.
    b. This standard does not consider various constructions and material specs for helmets, and Snell does not recommend a specific material or design.
    c. “An equestrian helmet consists generally of a rigid head covering and a retention system composed of flexible straps and hardware. The rigid covering protects the head from direct impact by its capacity to manage impact energy and also by its capacity to spread a concentrated load at its outer surface over a larger area of the wearer's head. The retention system holds the headgear in position throughout normal usage and especially during falls and accidents.”
    d. As far as lateral crush testing goes: “The helmet must also meet requirements for rigidity in order to provide some measure of protection against crushing injuries to the head. The helmet is compressed laterally between two parallel cylindrical bars. The helmet must withstand a prescribed level of compressive force for a given period of time. The helmet's peak lateral deformation must not exceed a prescribed value.”
    e. Lateral crush/ rigidity test: The rigidity test is performed on a single sample kept at laboratory ambient temperature and humidity. The sample shall be tested in a bearing press device in the following manner: the sample shall be oriented so that axis of the press element passes within 1 centimeter of the intersection of the longitudinal and S0 planes on either side of the headgear. The forces on either side of the helmet shall be applied through flat, rigid surfaces sufficiently sized and placed so that their edges extend at least 20 mm above and below the S0 plane and extend past the front and rear of the helmet. If necessary, the helmet may be braced at its crown and brim to maintain its position in the press. The press shall then be engaged to apply a force of 50 newtons and the extension of the press element shall be measured. The element shall then be engaged to develop a force of 1000 newtons ± 50 newtons. This force shall be maintained for no less than 120 seconds after which the extension of the press element shall be remeasured and recorded. The difference between the two measurements shall not exceed 30 mm.”
2. PAS 015:2010 (British)
    a. Areas of testing provided within this standard: shock absorption, penetration resistance, test area and extent of protection, retention system strength effectiveness, stability, and lateral deformation.
    b. Lateral deformation testing: “When tested in accordance with annex H, the maximum lateral deformation of the helmet shall not exceed 30 mm, and the residual lateral deformation shall not exceed 10 mm.”
    c. Testing: The helmet is subjected to transverse compressive forces and the deformations measured

    d. Procedure: “The helmet shall be placed transversely between two guided rigid flat parallel plates of nominal size (300 x 250) mm, with its AA' plane aligned with the major centreline of the plates. An initial force of 30 N shall be applied perpendicular to the plates, so that the helmet is subjected to lateral force. After 30 s the distance between the plates shall be measured (dimension x).The force shall be increased by 100 N per minute, up to 800 N, and shall be held for 30 s, after which the distance between the plates shall again be measured (dimension y). The force shall be decreased to 25 N and then immediately increased to 30 N, and shall be held for 30 s, after which the distance between the plates shall again be measured (dimension z). Measurements shall be made to the nearest millimetre, and the extent of damage, if any, shall be noted. The maximum lateral deformation is the difference between dimensions x and y. The residual lateral deformation is the difference between dimensions x and z.
3. BS EN 1384:2017 (British)
    a. Specific issues addressed within this standard: shock absorption, field of vision, lateral deformation, materials, area of protection, resistance to penetration, and additional construction requirements
    b. “When tested in accordance with 5.9 the maximum lateral deformation of the helmet shall not exceed 30 mm, and the residual lateral deformation shall not exceed 10 mm.”
    c. Testing apparatus: The apparatus shall have two guided rigid flat parallel plates with a minimum size of 300 mm x 250 mm having their edges radiused to (10 ± 0,5) mm.
    d. Procedure: One sample of each of the largest and smallest helmet sizes shall be tested. The samples shall be tested in the state ‘as-received’. The helmet shall be placed transversely between two guided rigid flat parallel plates, with a minimum size of 300 mm x 250 mm, with the AA' plane aligned with the major centreline of the plates. An initial force of 30 N shall be applied perpendicular to the plates, so that the helmet is subjected to lateral force. After 30 s the distance between the plates shall be measured (dimension x). The force shall be increased by 200 N per minute, up to 630 N ± 20 N, and shall be held for 30 s, after which the distance between the plates shall again be measured (dimension y). The force shall be decreased to 25 N within 30 s and then immediately increased to 30 N, and shall be held for 30 s, after which the distance between the plates shall again be measured (dimension z). Measurements shall be made to the nearest millimetre, and the extent of damage, if any, shall be noted. The maximum lateral deformation is the difference between dimensions x and y. The residual lateral deformation is the difference between dimensions x and z.
4. ASTM (American)
    a. No information regarding testing done to account for lateral crushing. Only tests being done are dynamic loading testing and helmet stability testing.