

# Engineering Standards and the Engineers Who Love Them



# Standards vs Codes

- You will come across standards and codes throughout your career.
- A standard is a document that defines good practice and is developed by an expert group within the profession.
  - It contains recommended practice, not legal requirements
- A code is a legal document that is legislated to define required practice
  - You MUST follow any applicable codes

# AS 1100

- I thought about going through this standard today...
  - It is far too dry and boring

**4.1.6.1 Decimal sign** The decimal sign for technical drawings and associated documents should be the dot, either on the line or at midheight. An example is shown in Figure 4.8.

The diameter of the dot should be twice the thickness of the line used to form the character, and shall be not less than the line thickness. It should be given a full character space.

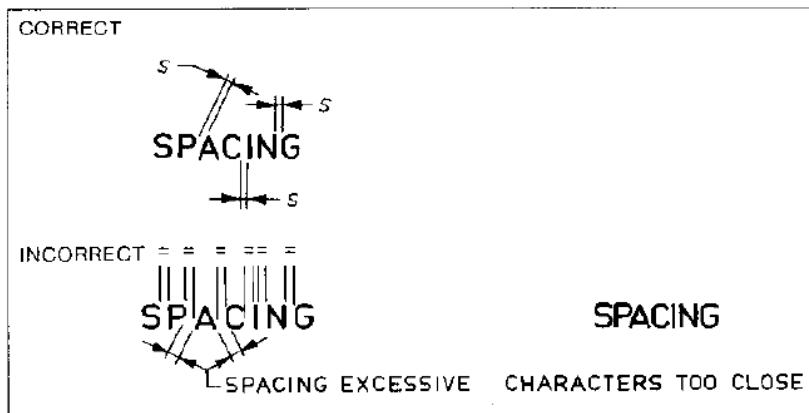
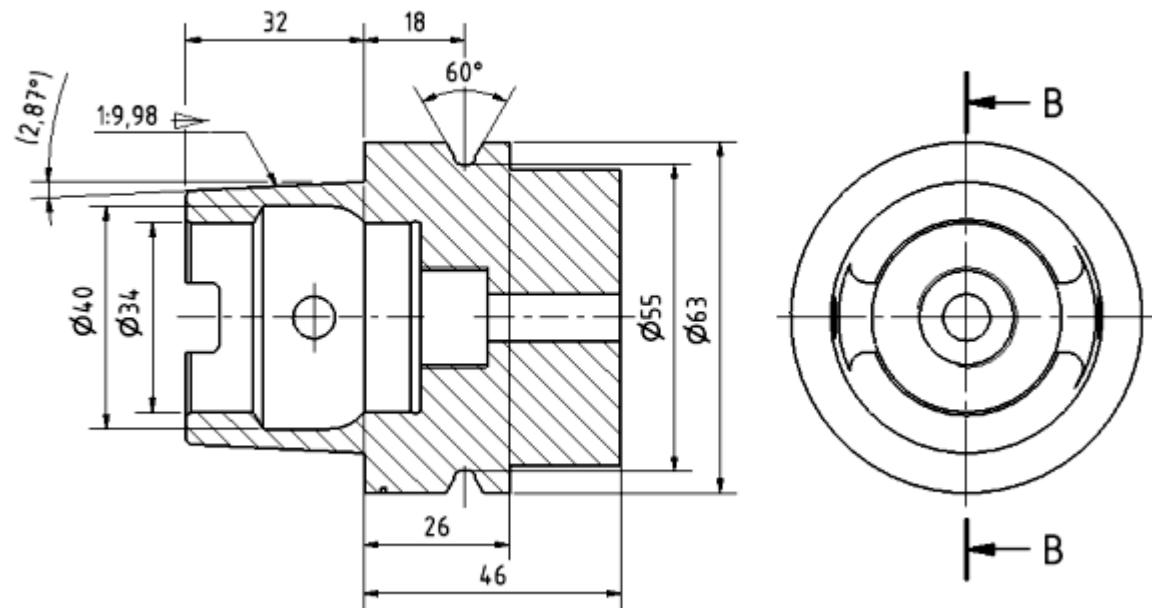


FIGURE 4.6 SPACING OF CHARACTERS

# AS 1100

- Next week, we will be practicing engineering drawings
- Specifically, we will be focusing on how to determine the quality of a drawing
  - This part tends to be the trickiest part for students



# Proving Compliance

- When you begin working in industry, you will be made aware which standards and codes you must comply with.
- However, what is far more important is proving compliance.
- This is normally hard-wired into design review processes.
- How do we prove compliance though?

# Example 1

- How would you prove this standard?

42.15.5. Communication with Driver

42.15.5.1. Unless it is located within the driver's cab or is provided with a direct entrance thereto means must be provided to enable its occupant to communicate with the driver.

42.15.5.2. Such means may include telephones, speaker tubes, buzzers, pull cords, or other mechanical or electrical means.

# Example 2

- How would you prove this standard?

66.2.5.4.

A '*Seat*' with no other '*Seat*' behind it is required to withstand a horizontal longitudinal force of 10 times the weight of the '*Seat*' together with the loads of any seat belts mounted on the '*Seat*'.

# Example 3

- How would you prove this standard?

## **43.2. TURNING CIRCLE**

Every vehicle, including a motor vehicle in combination with a trailer, shall have a turning circle in either direction, as determined by reference to the extreme outer edge of the tyre track at ground level, not exceeding 25 metres in diameter.

# Example 4

- How would you prove this standard?

43.4.1.1.1. The '*Total Length*' of the rigid portion of any vehicle, other than an omnibus, or a '*Semi-trailer*' shall not exceed 11 m and the distance from the '*Front End*' to the line from which the '*Rear Overhang*' is measured shall not exceed 8.3 m.

# Example 5

- How would you prove this standard?

## 42.10. FIELD OF VIEW

- 42.10.1. A motor vehicle must not be so constructed or equipped nor must anything be affixed thereto in such a manner as to prevent the driver from having an adequate view of traffic on either side of the vehicle and in all directions in front of the vehicle to enable the vehicle to be driven with safety.
- 42.10.2. No motor vehicle must be so constructed such that the '*Seating Reference Points*' of any passenger seating position is more than 100 mm in front of the driver's seating position when both '*Seats*' are in the rearmost position of adjustment.
- 42.10.3. No motor vehicle must be constructed to provide seating for a passenger at the right-hand side of the driver.

# Summary

- It is not enough to be aware of standards, you must also be able to prove compliance
- This compliance proof is often mandated in order to progress to the next stage of the design process
- Interpretation can be an issue...
- Various methods to prove compliance include
  - Engineering drawings
  - Photos
  - Visual inspection
  - Calculations
  - Simulation
  - In-field demonstration