Department for Business, Energy & Industrial Strategy

Energy Technology List

Guidance Note 8: Calculating the net volume of professional refrigerated storage cabinets

The Energy Technology List for energy saving technologies

April 2020

Introduction

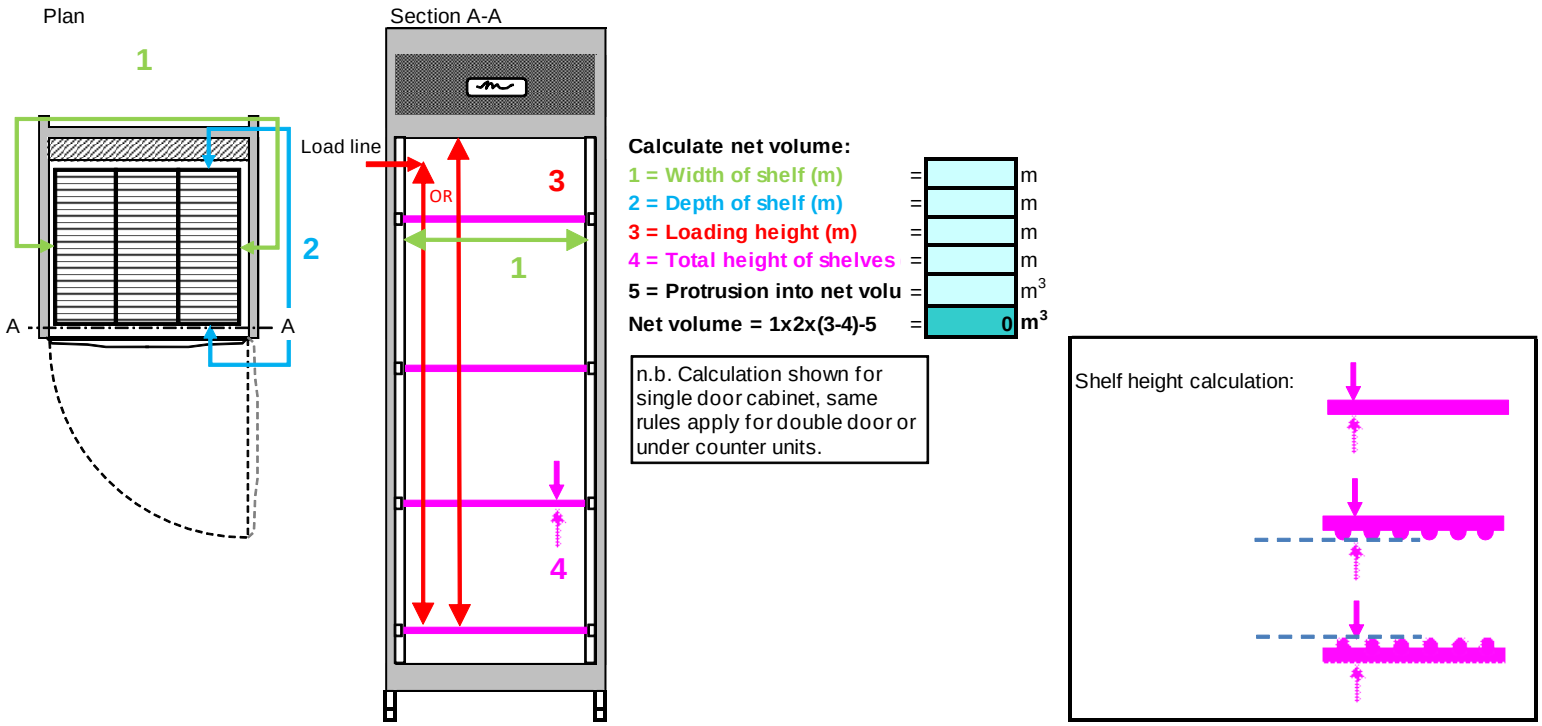
Professional Refrigerated Storage Cabinets (PRSCs) were added to the refrigeration category of Energy Technology List (ETL) in 2003. This guidance note is intended to be read alongside the criteria for PRSCs. It describes in details how to calculate the net volume of PRSCs. Product applications should follow this approach and include calculations and drawings to demonstrate how the net volume has been calculated for the products concerned.

Purpose of the guidance note 8 for calculating the net volume of professional refrigerated storage cabinets

The purpose of guidance note 8 is to help reduce the disparities found during the last review of PRSCs in the calculation of their net volumes. Equally, this note is intended to reduce the likelihood of rejection for non-compliant applications.

The process for calculating the net volume of professional refrigerated storage cabinets

The net volume is calculated as follows: the usable shelf area that food can be loaded onto, multiplied by the usable height into which food can be loaded minus the height of the shelves. Figure 1 illustrates this method. If the shelf has clip supports or moulded supports that do not impinge into its area, the whole shelf can be considered available for loading. If the shelf is supported by 'C' sections the area of the supports can be included as long as they do not restrict loading of foodstuffs. Where the shelf is recessed into the cabinet wall, the recessed area is unavailable for food loading. Where supports do impinge on the shelf area, only the usable shelf area available for food loading can be included. The volume of any other protrusions into the usable space must be deducted from net volume calculated. Consequently, manufacturers should use Table 1 to indicate their type of shelf attachment and the corresponding width.

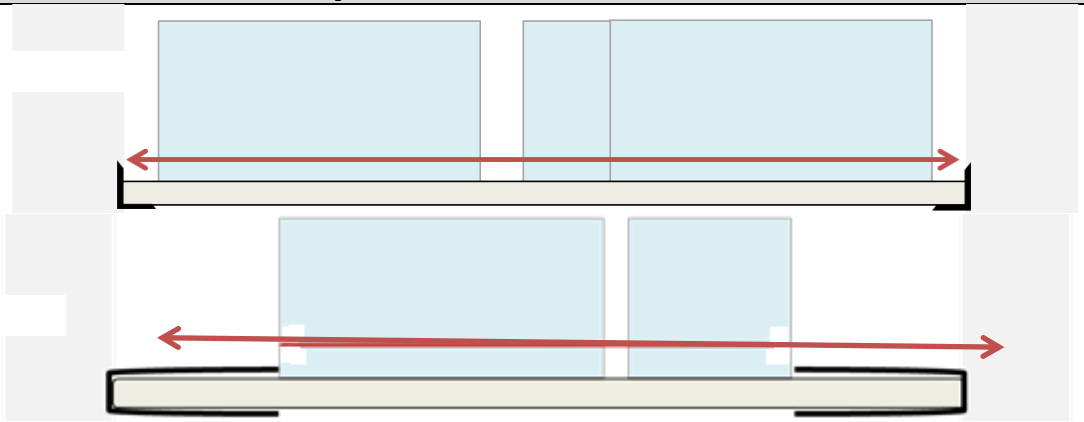
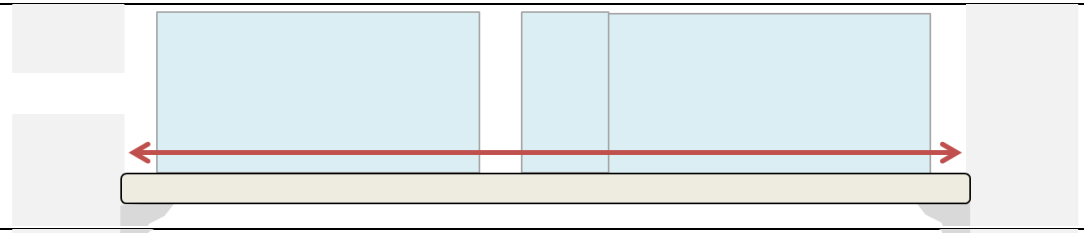


1. Ignore any area that is recessed, i.e. not available for food loading
2. Make sure shelf is fully available for food loading, if not, adjust to take into account loading depth
3. Take height from top of lowest shelf/cabinet base (if cabinet designed for food loaded on base AND cabinet tested with packs on base) to either load line (if marked) or ceiling
4. Total height of shelves = (Number of shelves -1) x height of each shelf (excludes bottom shelf))

Figure 1 Proposed calculation method for net volume

Net volume (m^3) = usable shelf area (m^2) x (usable height (m) – shelf height (m)) – volume of protrusions into the refrigerated space (m^3)
Net volume (litres) = net volume (m^3) / 1000

Table 1 Claimable width of shelf by attachment type

Shelf attachment type	Claimable width of shelf for net volume calculation (red arrows show width of shelf that can be claimed in net volume)
☐ Clip attachments or ☐ C section	
☐ Moulded supports	
☐ Insertion into wall