# Building scheme for TER

1. Periodic Building Unit – 2. Connection mode – 3. Projections of the unit cell content
4. Channels and/or cages – 5. Supplementary information

## 1. Periodic Building Unit:

The one-dimensional Periodic Building Unit (PerBU) is composed of units of 20 T atoms: two double 4-rings and four additional T atoms (or four 4-1 units; bold in Figure 1; compare **BRE**). The PerBU equals the strip, extending infinitely along ***c***, shown in Figure 1. Neighboring T20-units in the strip, related by a rotation of 180º about ***c***, are connected along ***c*** by (fused) 6-rings and 10-rings.

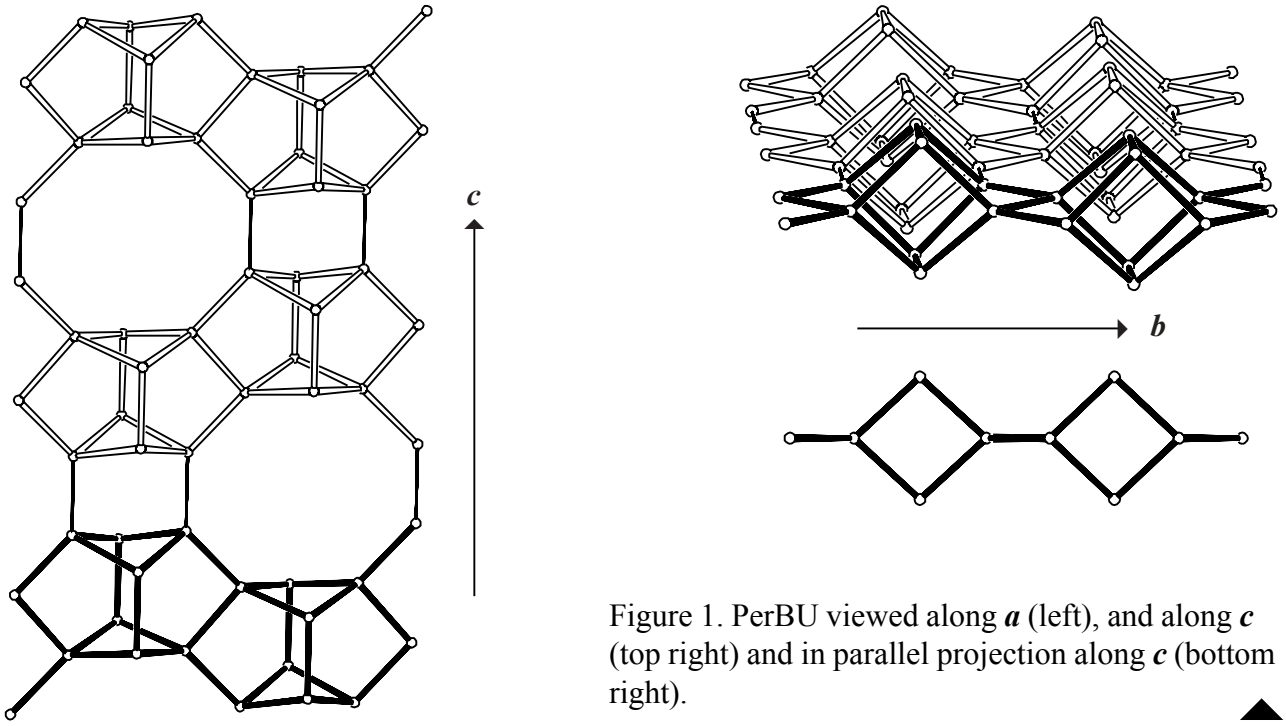



Figure 1. PerBU viewed along ***a*** (left), and along ***c*** (top right) and in parallel projection along ***c*** (bottom right).

## 2. Connection mode:

Neighboring PerBUs, related by a shift of ½(***a*** + ***b***), are connected through 6-rings as shown in Figure 2. 10-Ring channels parallel to ***a*** are formed.

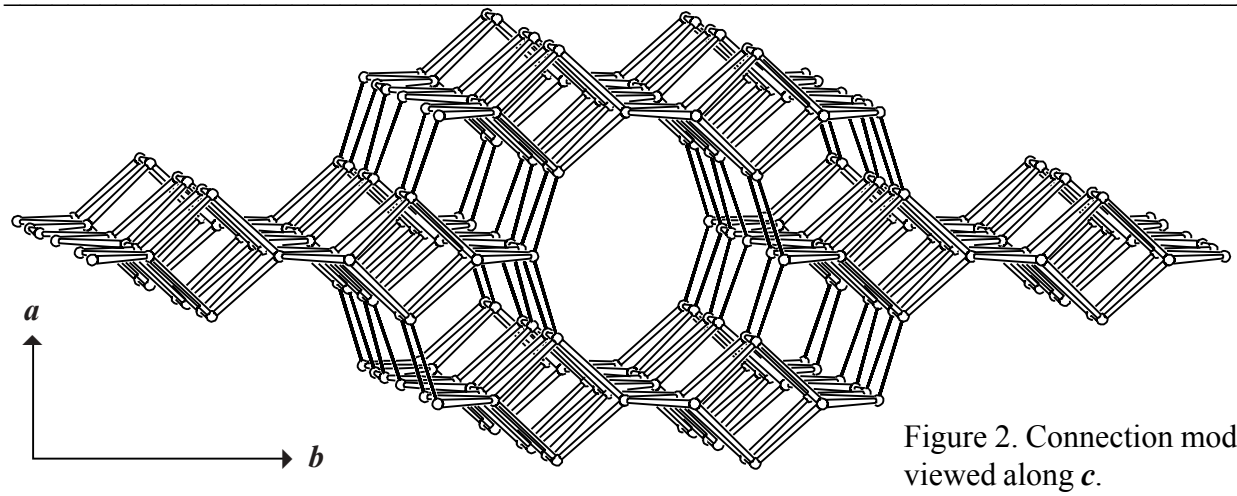



Figure 2. Connection mode viewed along ***c***.

**3. Projections of the unit cell content:** See Figure 3.

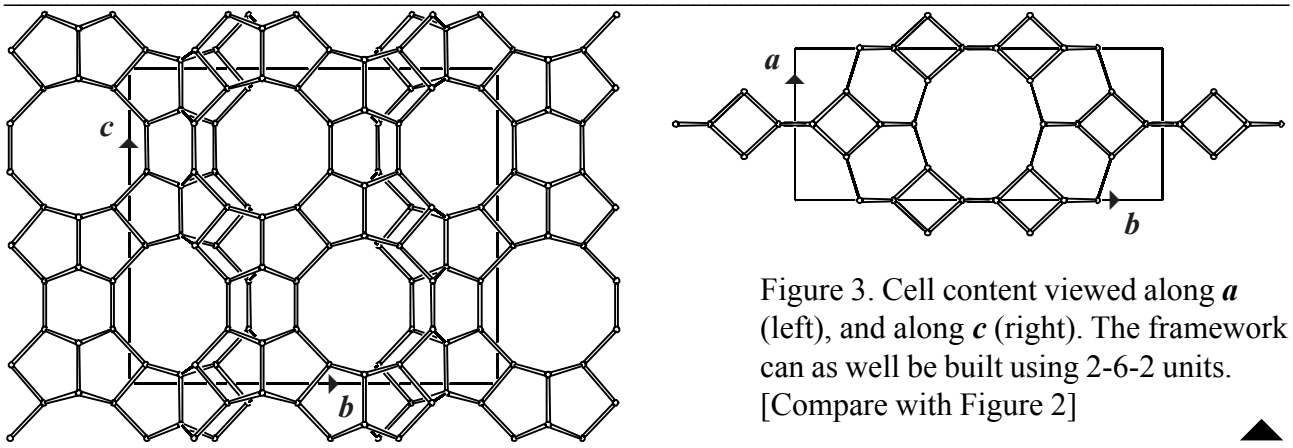
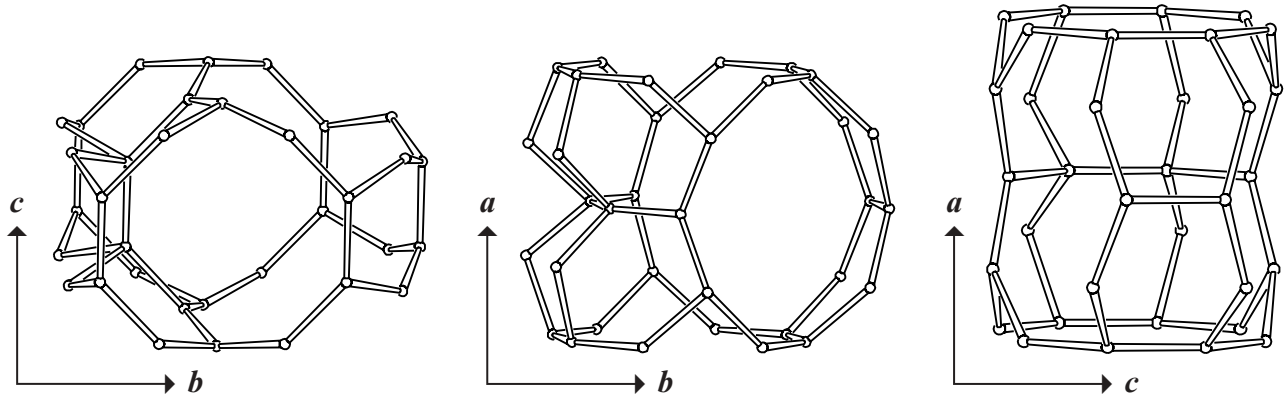



Figure 3. Cell content viewed along ***a*** (left), and along ***c*** (right). The framework can as well be built using 2-6-2 units. [Compare with Figure 2]

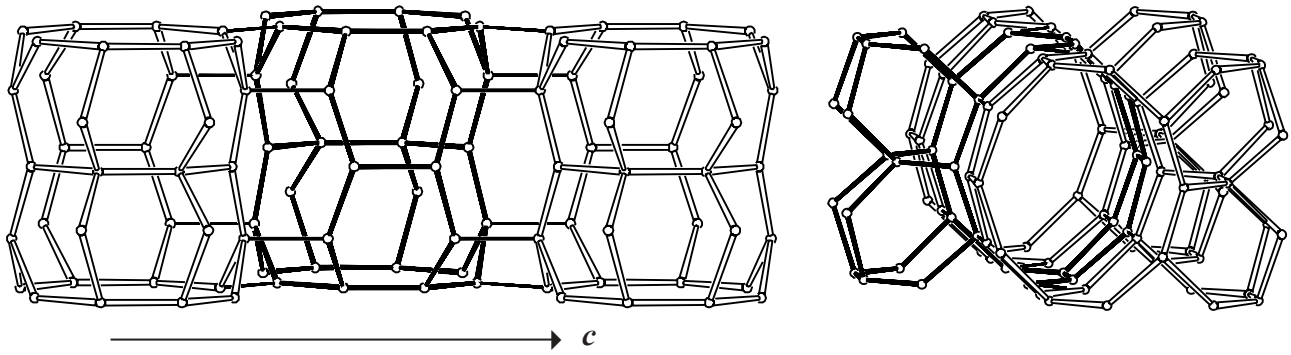
**4. Channels and/or cages:**

There are intersecting 10-ring channels parallel to ***a*** and ***c***. The channel intersection is shown in Figure 4(a) together with the **pore descriptor**. Channel intersections are linked into 10-ring channels parallel to ***c*** and to ***a*** as illustrated in Figure 4(b).



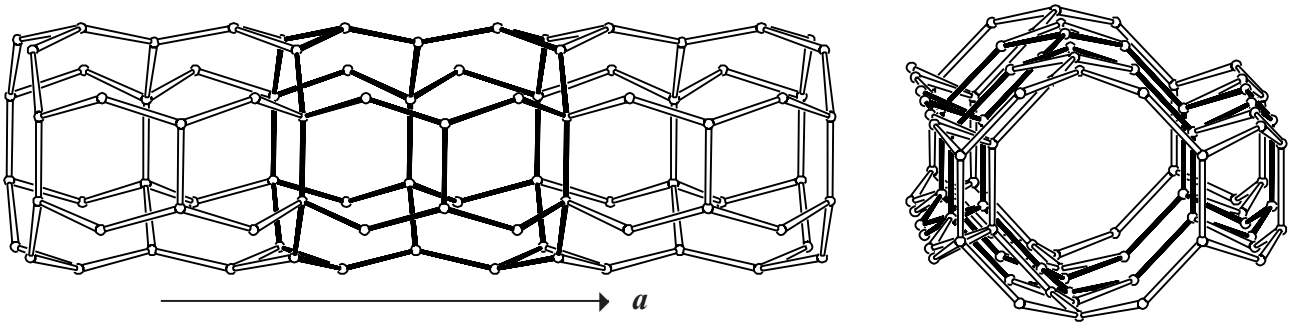

Pore descriptor: {2 [$6^8 10^4$] [100] (10-ring), [001] (10-ring)}

**(a)**




**(b1)**

Figure 4. (a): Channel intersection, with pore descriptor, viewed (from left to right) along ***a***, ***c*** and ***b***; (b1): Linked channel intersections along ***c*** viewed along ***b*** (left), and viewed along the 10-ring channel axis parallel to ***c*** (right); [Figure 4 is continued on next page]




**(b2)**

Figure 4 [Cont'd]. (b2): Fused channel intersections along ***a*** viewed along ***b*** (left), and along the 10-ring channel axis parallel to ***a*** (right).

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**5. Supplementary information:**

***Other framework types containing (modified) double 4-rings (D4Rs)***
Double 4-rings (D4Rs) can be connected in several other ways. In some cases the 4-rings of the D4Rs are not 4-fold connected and/or additional T atoms are needed to build the framework. In the **INTRO** pages links are given to a detailed description of a sub-set of framework types that contain (modified) D4Rs (choose **Double 4-rings**). There is also a link provided to a summary of the PerBUs used in the building schemes of these framework types (choose: **Appendix**; **Figure 5**).