

Building scheme for AFO



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1. Periodic Building Unit:

AFO can be built using the crankshaft chain (bold in Figure 1 (left)) running parallel to c . The repeat distance along a crankshaft chain varies between 8.4-9.9 Å. The repeat unit consists of 4 T atoms. A one-dimensional Periodic Building Unit (PerBU) is obtained when five crankshaft chains are connected into a channel with a 6-ring aperture with two additional chains as “handles”. The channel wall consists of fused 6-rings. The repeat unit of the PerBU is a cylindrical 6-ring band with two “handles” consisting of 20 T atoms: two 2-6-2 units or four 4-1 units (bold in Figure 1 (right); see also [Alternative description](#)).

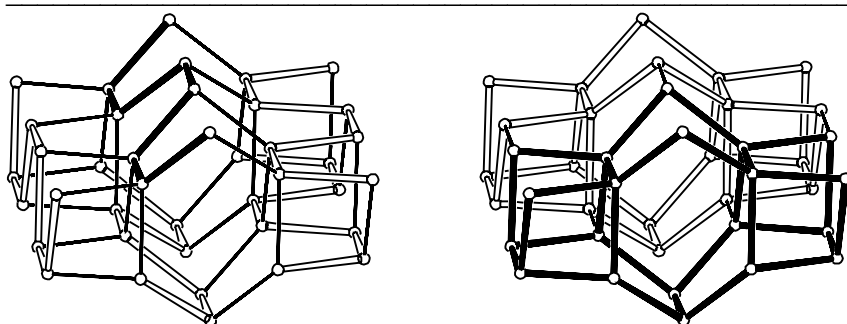


Figure 1. PerBU in AFO, seen along c , constructed from five crankshaft chains (left) and from T20-units: two 2-6-2 units or four 4-1 units (right). ▲

2. Connection mode:

Neighboring PerBUs, related by pure translations along a and along $\frac{1}{2}(a \pm b)$, are connected through single crankshaft chains. 6-Rings are formed as illustrated in Figure 2.

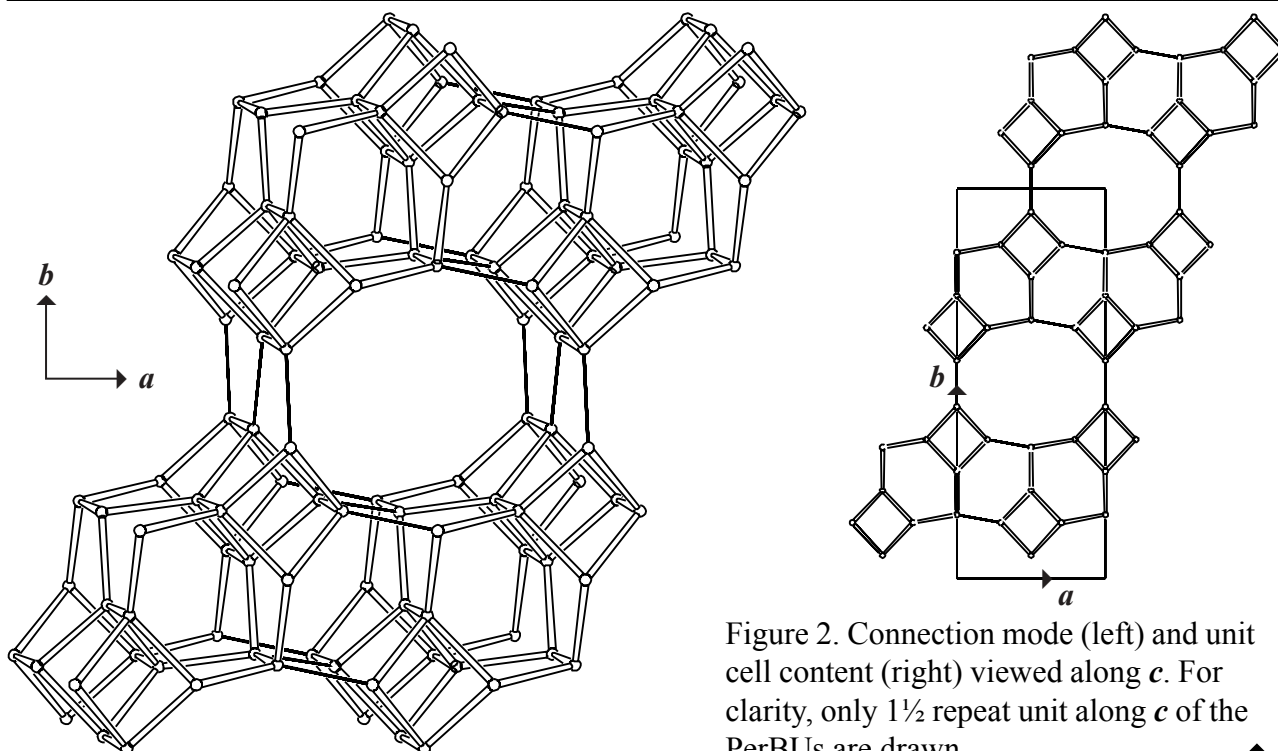
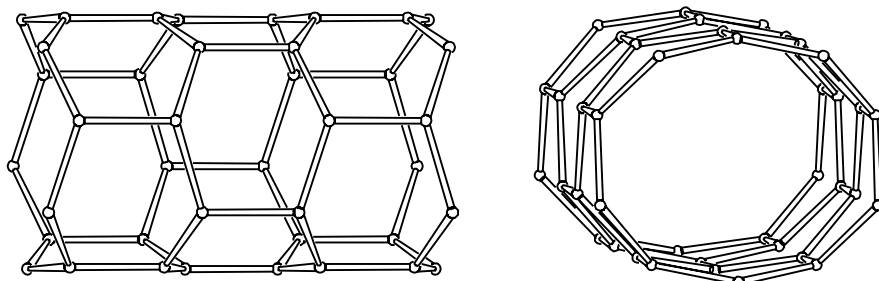


Figure 2. Connection mode (left) and unit cell content (right) viewed along c . For clarity, only $\frac{1}{2}$ repeat unit along c of the PerBUs are drawn. ▲

3. Projections of the unit cell: See Figure 2. ▲

4. Channels and/or cages:

The non-interconnecting one-dimensional channels in **AFO**, parallel to c , are topologically equivalent to the channels in **AEL** and **AHT**. One channel is depicted in Fig. 3. The **pore descriptor** is added.



{1 [6¹⁰10^{2/2}] [001] (10-ring)}

Figure 3. Channel in **AFO** viewed perpendicular to the channel axis c (left) and along c (right). ▲

5. Supplementary information:

Other framework types containing crankshaft chains

In several framework types at least one of the unit cell dimensions is between 8.4 and 9.9 Å. In many cases this indicates the presence of crankshaft chains.

In the **INTRO** pages links are given to detailed descriptions of these framework types (choose: **Crankshaft chains**). There is also a link provided to a summary of the Periodic Building Units used in the building schemes of these framework types (choose: **Appendix; Figure 3**).

Alternative PerBU of AFO using (modified) double 6-rings (D6Rs)

Several framework types, like **AFO**, can be built using (modified) D6Rs.

In the **INTRO** pages links are given to these framework types (choose: **Double 6-rings**). There is also a link provided to a summary of the Periodic Building Units used in the building schemes of these framework types (choose: **Appendix; Figure 7**). ▲