Building scheme for AFY

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:

AFO can be built using the double 4-ring (D4R) drawn bold in Figure 1. The Periodic Building Unit (PerBU) equals the hexagonal layer obtained by connecting D4Rs through 4-rings around a 3-fold inversion axis as shown in Figure 1.

![Figure 1](image1.png)

2. Connection mode:

Neighboring PerBUs, related by pure translations along \(c\), are connected along \(c\) through single T-T bonds. 8-Rings are formed.

![Figure 2](image2.png)

Figure 1. Perspective views of the PerBU in AFY along \(c\) (left) and along [120] (top right) and parallel projection along [120] (bottom right).

Figure 2. Connection mode along \(c\) and unit cell content in AFY viewed along [120].
3. Projections of the unit cell content: See Figure 2.

4. Channels and/or cages:

The channel intersection is depicted in Figure 3 together with the pore descriptor. The channel intersection is topologically equivalent to the intersection in AFS and BPH. Channel intersections are connected into channels along <100>, along <210> and along [001] as illustrated in Figure 4.

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Figure 3. Channel intersections in AFY viewed along (from left to right) <100>, <210> and [001].

Figure 4. Connection of channel intersections parallel to [001] viewed along <210> (left) and along [001] (right); (c): Connection of channel intersections parallel to <100> viewed along [001] (left) and along <100> (right).
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).