

**Alternative Technology Advisory Committee  
Meeting Minutes – November 4, 2010**

**This meeting was held at the 1900 building and was attended by:**

Terry Whitehill  
Ed Vranizan  
Ron Hays  
Aron Faegre  
Kathy Bash

And guests of Ed's  
Suraya Aladro from CH2M Mexico City  
Julia Scott from CH2M Buenos Aires

Ed called the meeting to order and introduced his guests, who were interested in learning how the committee work fosters the integration of new sustainable technologies. As we went around the room with introductions, Terry explained more about how ATAC fits into the plans review process, and particularly how it fits with the appeals process.

Rocket Mass Heaters Application 09-002:

The committee is reviewing additional information. Terry had spoken with Marcia Karr (Mech.Engr.) to see if she had any issues with rocket stoves. Her recommendation was to make sure there is an adequate supply of outside air. Due to the nature/geometry of construction and feed-hole, OA cannot be supplied in the same way as is common in wood stoves. The point is to make sure a fan somewhere else in the house can't cause a back draft on the rocket stove. The OA requirement and verification is something that needs to get added to the construction check list.

While a substantial amount of work has been done by the applicants in identifying critical points to check during and after construction (as listed on their new website), the committee feels like there needs to be a schematic drawing to accompany the written description. The fireplace/chimney illustration for the current building code is attached as an example. The objective is to give a designer or inspector the critical information for a safe installation but not to be so detailed as to thwart the creative opportunities inherent in rocket stove design. In a previous submittal, the applicants had an illustration that the committee feels like is a good starting point. The written information needs to get tied to that (or similar) illustration.

Light Straw Clay Application 09-005:

The committee is reviewing additional information. The application is being made to allow light straw clay to be used as a non-structural wall material. Although there was quite a bit of general discussion on the topic of moisture content and determining how to measure appropriate dryness prior to finishing the walls, the crux of the issue from a building code/energy code perspective is 1) ensuring the material will end up with the insulative qualities it is designed to have and 2) demonstrating that the wall section meets overall U values as identified in the code.

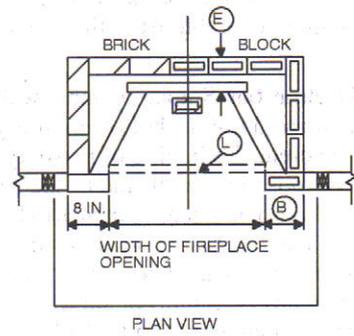
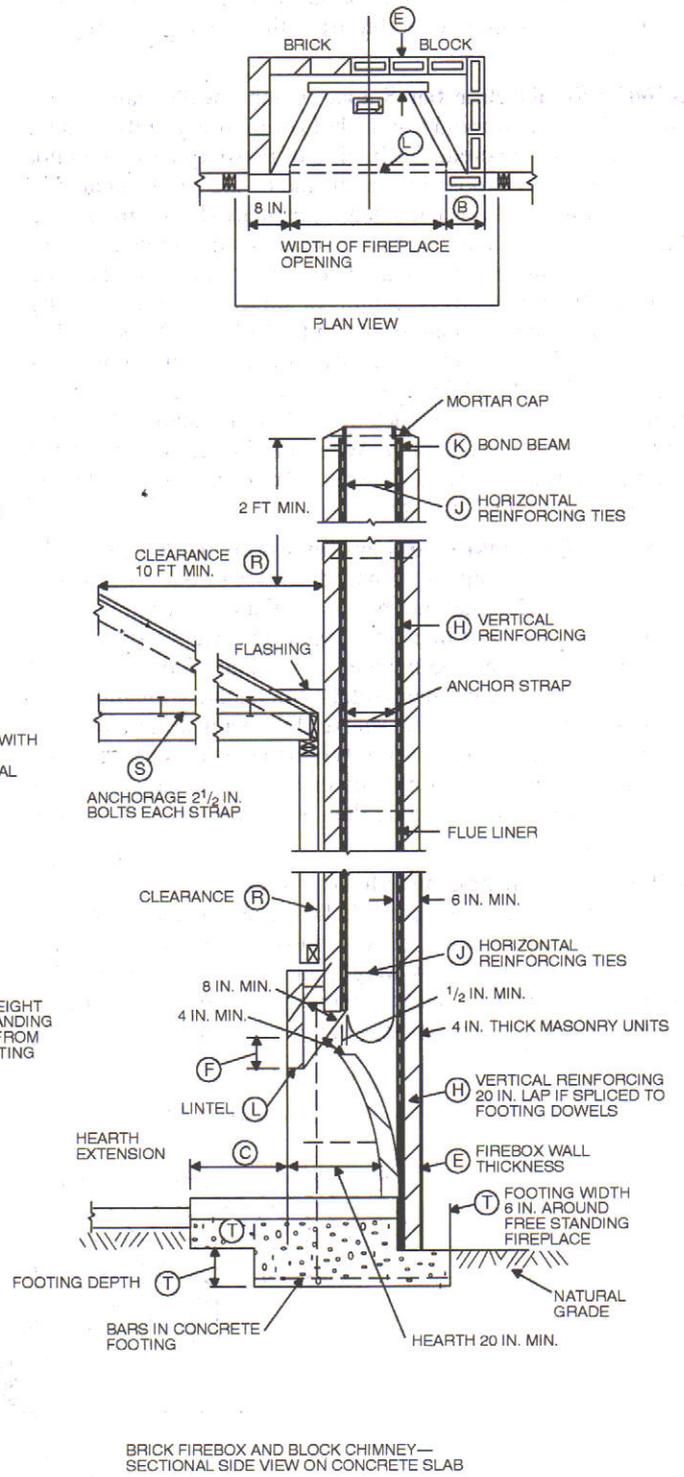
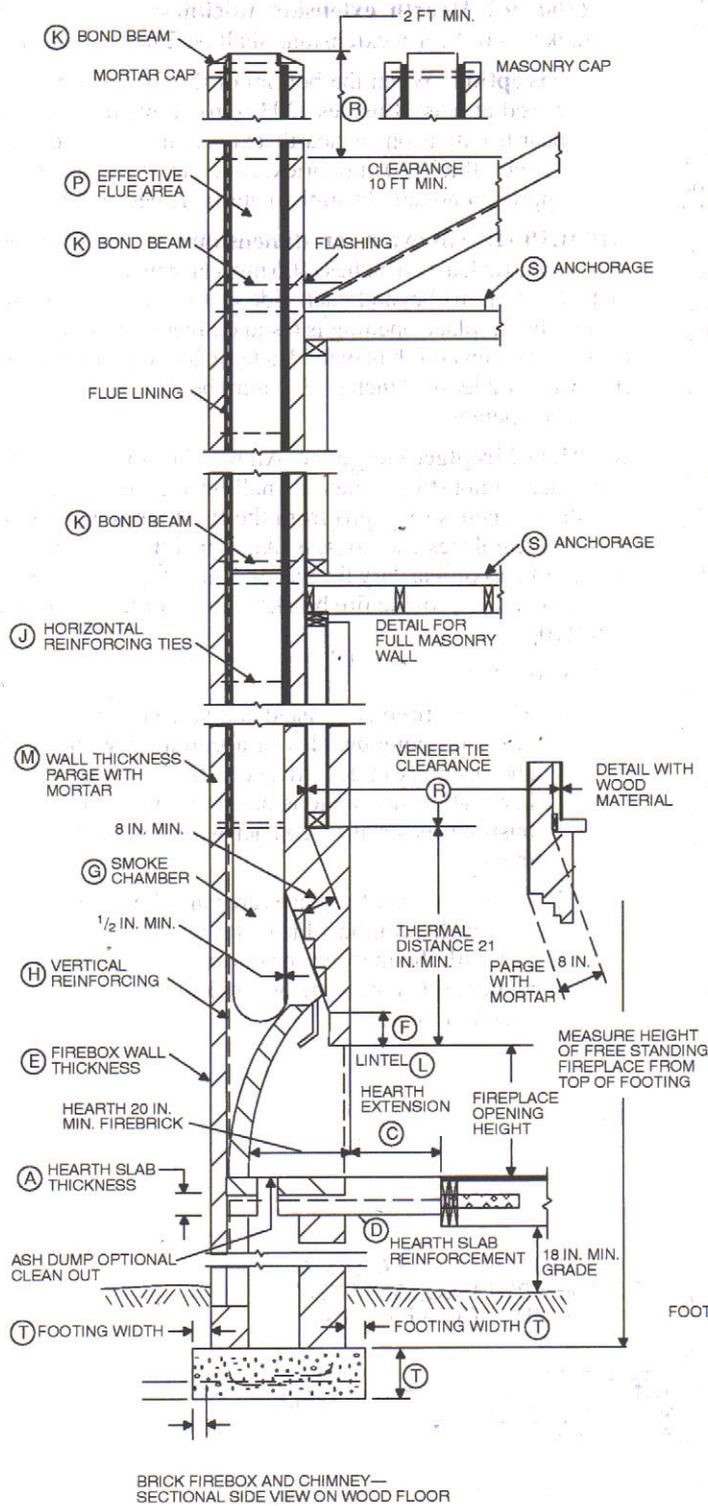
Specific recommendations:

- Drop the ICC numbering format and present simply as a numbered outline. We think this would be more appropriate as an Appendix to the Residential Code.
- Delete (in what is now section 508.5.1) the words 'unless shown otherwise in an approved design by an architect or engineer.'
- Add (in what is now 508.9.2) wording to assure the wall reaches max. moisture content of 20% to a depth of 4" *measured from each side* prior to the application of a finish. Add wording that this is self-certified moisture measurement (similar to currently required certification for wood construction).
- Add ASTM standard wording for clay. Ed & Ron will find this as most of us do not have a full set of ASTM standards. This wording that we want incorporated tells the people making the clay mixture how to determine that they have the right clay mix.
- Calculate the U value for a typical wall section measuring 8' nominal height and 8' long with 12" of light straw clay as proposed (using the 1.6 per inch R-value). You can contact Kathy Bash at 971-219-2844 or 503-335-9040 if you have any questions about how to do this calculation.

FastBacker Application 10-006:

The committee reviewed this new application. Since the use of this product is not a material or method that is currently scrutinized during any part of the plan review or permit process, and since the product is only used in non-structural applications, we see no reason why it would trigger an appeal of the existing building code. Since the work of this committee is to make recommendations that can be used as part of an appeals process, we think the decision to use FastBacker is more appropriately made by the contractor and the building owner. We find nothing in the existing code that would restrict its use.

Meeting adjourned at 5pm. Next regular meeting Dec. 2 at 3:30pm.



For SI: 1 inch = 25.4 mm, 1 foot = 304.8 mm.

FIGURE R1001.1  
FIREPLACE AND CHIMNEY DETAILS

TABLE R1001.1  
SUMMARY OF REQUIREMENTS FOR MASONRY FIREPLACES AND CHIMNEYS

ITEM	LETTER <sup>a</sup>	REQUIREMENTS
Hearth slab thickness	A	4"
Hearth extension (each side of opening)	B	8" fireplace opening < 6 square foot. 12" fireplace opening ≥ 6 square foot.
Hearth extension (front of opening)	C	16" fireplace opening < 6 square foot. 20" fireplace opening ≥ 6 square foot.
Hearth slab reinforcing	D	Reinforced to carry its own weight and all imposed loads.
Thickness of wall of firebox	E	10" solid brick or 8" where a firebrick lining is used. Joints in firebrick 1/4" maximum.
Distance from top of opening to throat	F	8"
Smoke chamber wall thickness Unlined walls	G	6" 8"
Chimney Vertical reinforcing <sup>b</sup>	H	Four No. 4 full-length bars for chimney up to 40" wide. Add two No. 4 bars for each additional 40" or fraction of width or each additional flue.
Horizontal reinforcing	J	1/4" ties at 18" and two ties at each bend in vertical steel.
Bond beams	K	No specified requirements.
Fireplace lintel	L	Noncombustible material.
Chimney walls with flue lining	M	Solid masonry units or hollow masonry units grouted solid with at least 4 inch nominal thickness.
Distances between adjacent flues	—	See Section R1003.13.
Effective flue area (based on area of fireplace opening)	P	See Section R1003.15.
Clearances: Combustible material Mantel and trim Above roof	R	See Sections R1001.11 and R1003.18. See Section R1001.11, Exception 4. 3' at roofline and 2' at 10'.
Anchorage <sup>b</sup> Strap Number Embedment into chimney Fasten to Bolts	S	3/16" × 1" Two 12" hooked around outer bar with 6" extension. 4 joists Two 1/2" diameter.
Footing Thickness Width	T	12" min. 6" each side of fireplace wall.

For SI: 1 inch = 25.4 mm, 1 foot = 304.8 mm, 1 square foot = 0.0929m<sup>2</sup>

NOTE: This table provides a summary of major requirements for the construction of masonry chimneys and fireplaces. Letter references are to Figure R1001.1, which shows examples of typical construction. This table does not cover all requirements, nor does it cover all aspects of the indicated requirements. For the actual mandatory requirements of the code, see the indicated section of text.

a. The letters refer to Figure R1001.1.

b. Not required in Seismic Design Category A, B or C.