## Fiber Cement Siding

Fiber cement siding also referred to by the name brand Hardie Board, is a commonly used siding material and is the preferred choice over composition or “Masonite” siding. As with any material there are inherent advantages and disadvantage. Much like composition siding and many other materials installation details are critical to the long term performance of this material.

Fiber cement siding is similar to the old “asbestos” siding used in many 50’s and 60’s homes. The key difference it that modern fiber cement siding uses cellulous material instead of asbestos. Typically wood pulp is used as the binder for the cement.

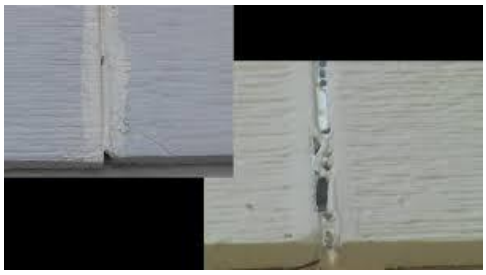
Contrary to popular belief fiber cement siding is susceptible to water damage. This is due to the use of the cellulous materials which will absorb water, if left exposed to direct water the material will eventually deteriorate. Additionally, repeated exposure to water will cause the material to fail.

As with any product or material the installation practices and recommendation tend to change overtime as more experience and feedback on the performance of the product is received. This is true with fiber cement products. Therefore, it is always prudent to know when the home was built or when the material was installed. A review of the installation instructions will give you a good idea of what was recommended at that time and what was considered acceptable. Even then it is not always possible to determine the manufacture or the exact date of installation. As with other products like Adhered Masonry Veneer you should defer to best industry practices and guidelines for the basis of your inspection findings.

Fiber cement are is very durable and fire resistant. The product comes in many types of styles and textures. Fiber board cement siding offers complete protection from insects and rotting. On the other side fiber cement siding requires a higher skilled worker for installation and as such is more expensive to install. It is also more prone to cracking and impact damage then other forms of siding like vinyl. As with any product there are different grades and options that are available, each with their own special installation requirement.

## Common Defects

Butt Joints



One of the most common defects is gaps at butt joints. Early on caulking butt joints was recommended practice, so early installations will almost always have caulked butt joints. Check this joints as the caulking tends to fail over time and since there usually no flashing behind the butt joint this is an ideal point for water penetration and resulting damage to the wall sheathing. It is acceptable

to use a metal joint flashing in place of caulking. This is a more durable approach but not always used mostly due to cosmetic reasons.

On newer installations you will not see caulked butt joints. Instead flashing is placed behind the joint. Look carefully or insert a small probe to see if the flashing is present. Sometimes you can see the edge of the flashing at the bottom of the siding. From a repair stand point this condition can be corrected and it is possible to install flashing in an existing installation. It is acceptable to re-caulk the joint but this is not desirable as the caulking will fail again, it usually looks bad and painting will be necessary.

Installation of wet siding

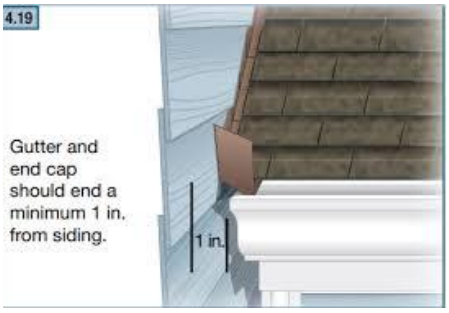
Fiber cement siding must be installed dry if it is left in the open and exposed to moisture the siding will swell. After the wet siding is installed it will dry and shrink resulting in larger then desired gaps at the butt and vertical trim joints. Premature failure of caulking and wider than normal gaps at the butt joints and were the siding meets the trim are suggest that the siding may have been installed when it was wet. It is almost impossible to prove this and would fall to the manufactures representative to determine if this is the case.

Vertical Trim Joints

Lack of caulking or failed caulking at vertical trim joints around windows or corner boards is a common defect. Look carefully at this intersection as gap and voids in the caulking may be present or the caulking was never installed. Failing or missing caulking can allow water to enter behind the siding and result in damage to the underlying components. This is a reportable condition that should be repaired.

Gutter Contact

Most installation guidelines recommend spacing the gutter away from the siding and it should not be in direct contact with the siding. This is a common defect as most gutter installers are not familiar with this detail and do not take the time to properly installed the gutter system.




Flashing

The two most common flashing defects are missing kick out flashings where a lower roof meets an upper wall and head or cap flashing above windows, doors and other penetrations. Lack of flashing in these areas again opens the potential for water penetration and resulting deterioration much of which cannot be seen until it has become excessive or renovation work is undertaken.

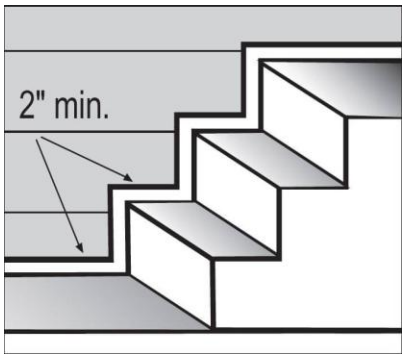
Loose or improperly nailed siding

For appearance reasons most fiber cement siding is blind nailed, except in high wind areas like the coastal region then face nailing is required. Loose, miss aligned or siding raised at butt joints can be a sign of improper nailing. It can be difficult to determine when conditions suggest improper installation or are just typical and do not represent a concern. Generally, excessive and widespread conditions are a clear indication of improper nailing.

Check gable end walls on truss framed homes as sometimes they will not install sheathing in this area or a nailing strip is not present to allow for securing the siding. Some installers will install small pin or finish nails at the corner of the butt joints to prevent lifting of the siding in this area. Check for cracking as this is common when this type of nailing is used.

Clearance

A proper clearance from tops of windows, doors, roofing and other hard surfaces is required to prevent deterioration of the siding. The requirements changed around 2000 and no longer was caulking of the siding above windows and doors allowed. A proper clearance where the siding meets the roof is essential to allow for replacement of the roof covering and to prevent moisture absorption. Most manufactures recommend a clearance of 1 to 2 inches from concreate porches and stairs. Again this reduces the risk for damage from moisture absorption.




Cracking and other damage

Some fiber cement is susceptible to cracking due to suspected manufacturing defects. If you see random cracking in the open field of siding improper installation is a possible cause but a manufacturing defect could also be at fault. Corner cracking from pin nailing as was previously mentioned may be present. Like so many other situations the inspector must use their best judgement to determine when it represents a concern.

Look for evidence of mechanical damage. Fiber cement is more susceptible to impact damage then other traditional siding types. The best advice when damage is observed is for replacement of that section of siding as most repair methods are considered temporary and will eventually fail.

Coating Defects

Localized peeling or bubbled paint can indicated that adverse conditions are present. Usually the cause is moisture. Make sure that the siding is not exposed to excessive wetting from lawn sprinklers or overflowing gutters. Lack of a proper kick out flashing can also cause this condition as water flows down across the siding on a frequent basis. Remember water flows downward so if possible always check the framing and band joist in these areas as deterioration may be present.

Waves

All materials expand and contract, some at a larger rate than others. Fiber cement board does expand and contract and as a result some wavy siding may be observed. Unless excessive or widespread this is common and typical. However, it also could be an indication of improper installation techniques such as lack of proper clearance at the trim joints, improper nailing placement and frequency or nails that are missing or have not engaged the framing member. I you observe loose siding, cracked siding and excessive waves then installation defects should be suspect.

Non Standard Installation

Some manufactures such as James Hardie allow for trim to be installed on top of their product.

Another installation that we are seem more of is the application of trim designed for use with vinyl siding. In particular "J" channel, corner trim and windows and doors with built in "J" channels. We have not found any information the specifically prevent this but some say that the installation guidelines call for caulking where the siding meets all trim. Others question why you would use a product and installation detail that allows water to flow behind the siding. The argument is that the house wrap and flashing tape will take care of any water that may enter behind the siding. At least one manufacture (Certain Teed) requires all cut ends to be painted before installation. This is assumed to prevent moisture absorption through the end grain of the siding. Others note that the back of the siding is rarely primed and allowing water behind the siding could result in an increase in moisture absorption and damage.

References

James Hardie Installation Guidelines for lap siding

Certain Teed Installation Instructions

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