

Precaution on build-up roof

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Recently, the writer inspected an over 40 year-old house with tar and gravel build-up roof in Vancouver east, which is commonly constructed on flat roof, commercial buildings and condominiums. It is not often seen on the construction of residential detached houses nowadays. But due to the municipal limitation on the height of houses or the fancy design, Sometimes this kind of roof has to be adopted on the new buildings. Moreover, there are quite lots of this kind of houses on the re-sale market. Therefore, we will talk a little bit to understand build-up roof.



Other than the water resistant over lapped pitched roof, Build-up is waterproof, which is widely applied on flat or low pitch roof less than 3 in 12. The principle of its construction is to nail a layer of asphalt saturated felt on the plywood first, which is quite important to easily remove the old roof when it is time to replace; then to hot mop or torch on row by row of felt membranes from the eave to roof ridge. It could be 18", 12", 9" and 6" between the adjacent rows depending on the design of 2 layers or up to 5 layers of roof. 3-layer is common. After this, the gravel or aggregate will be embedded in a flood coat of hot asphalt that has been mopped onto the top of membrane. This gravel is the primary defense for the felts below. Also it provides ballast to help hold the roof membrane down, as well as the protection to UV attack. In addition, this aggregate should not have any sharp edges, which may pierce the membrane.

Due to its waterproof feature, once somewhere failed, leaking cannot be avoided. Moreover it is not easy to find out the leaking spots. But there are some weak sections for example the roof penetrations, chimney and etc. localized patching is the only method to fix in short term but always cause trouble and the whole roof replacement is the only way to entirely solve the problems. Normally this roof can last 15-20 years. Annual inspection and maintenance is necessary. The common conditions are patching, multiple layers, no protective surface, alligating, gravel erosion, ponding/vegetation and etc.

In term of this roof inspection, we found moss but not serious. There is missing of gravel and weathering asphalt to some extent. It looks like the roof replaced about 5 years ago. Water left in gutter which not only added load to roof and but also led to leaking as well as vegetation growing. We suggest cleaning the gutter to make the water drain out; cleaning vegetation by garden rake and moss killer or diluted bleach. Afterwards redistribution gravel with asphalt coating when roof dry completely.

To this kind of roof, the above maintenance is essential at least in every 2 years. The altered temperatures, weathering always cause the erosion and missing of gravel, which results in ponding and exposure of asphalt to UV. These are the reasons to fail the roof prematurely. If we can regularly maintain, it will let the roof last longer. Because the mass and danger of the build-up roof construction, it is costly to reroof.