**Week 5 Lesson 19 Exercise 32**

Study the table comparing strength and fire resistance properties of different building materials then answer the questions following:

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| **Material** | **Strength Rating** | **Fire Resistance Rating** | **Combined Rating** |
| Concrete | 8 | 9 |  |
| Timber | 6 | 7 |  |
| Brick | 7 | 8 |  |
| Plasterboard | 3 | 5 |  |
| Steel | 9 | 8 |  |

* + 1. Complete the table by calculating the combined strength and fire resistance rating for each building material using a weighted average approach where the strength is given a weight of 60% and fire resistance a weight of 40%. The combined rating can be calculated as follows: (0.6 x strength rating) + (0.4 x fire resistance rating).

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| * + 1. Rank the building materials and electrical fittings based on their combined strength and fire resistance rating.
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| * + 1. How do the strength and fire rating of concrete compare to those of steel?
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| * + 1. Why is plasterboard used as a building material given its low fire and strength ratings?
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| * + 1. How does the strength and fire rating of timber compare to the other building materials?
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| * + 1. What precautions should electricians take when doing electrical installations in a building with a thatched roof?
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| * + 1. What are some of the unique challenges electricians may face when doing electrical installations on a concrete building?
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| * + 1. How does moisture protection impact electrical installations on timber versus concrete buildings?
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