General Material Selection, Case Study and Deep Corrugated Profile For Commercial and Industrial Buildings

by Ir. Chong Chee Meng

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The Civil and Structural Engineering Technical Division (CSETD) organized a webinar talk on 'General material selection, case study and deep corrugated profile for commercial and industrial buildings'. The webinar talk was held on 15th October 2020 via Go To Webinar platform. The speaker were Mr Jack Chum and En. Zaidi Semail. Mr Jack has spent over 16 years in steel related industries since graduated from USM. In his career, he has been involved in process improvement, quaality assurance, product failure analysis, product specification and product development portfolio. En Zaidi has many years of work experience as design engineer and plant manager. His vast exposure in the metal roofing industry has given him the opportunity to have a good understanding of the various types of metal roof profiles.

This talk was moderated by Ir Chong Chee Meng, advisor of CSETD and was attended by 93 participants. The 93 participants included engineers from engineering consultants, contracting firms, government agencies and local authorities as well as faculty members from local institutions of higher learning.

The 1st speaker was Mr Jack Chum. He started his talk by explaining the process of coating. The process started with cold rolled coils (CRC) to continuous hot dip galvanizing to metallic coated steel. The metallic coated steel will then go through continuous coil painting, then prepainted and finally roll forming. After all this process, the steel can supply to project site. After that, he explained he difference between base metal thickness (BMT), total coated thickness (TCT) and after painted thickness (APT).

Mr Jack Chum explained the material specification should state type of profile e.g. pierced fix / concealed fix / standing seam, the base metal thickness, type of coated steel e.g. metallic coated or prepainted steel, the coating class and the steel grade e.g. high tensile G550 or soft iron G300. Mr Jack further clarified that the minimum base metal thickness for roofing is 0.42mm as per JKR Standard Specifications for Building Works 2014. Mr Jack stressed that engineer should specify the base metal thickness instead of total coated thickness to avoid confusion. Other than that, he also informed that type 'AZ' coating show better corrosion resistance compare to type 'Z' coating and engineer should specify the coating mass to reduce premature corrosion failure. Higher coating mass means improved corrosion resistant.

After Mr Jack finished his part, En Zaidi proceeded with his part on deep corrugation roof profiles. Deep corrugation refers to roof profile having high rib/crest/crown dimension ranging from 60mm to 160mm. The advantages of deep corrugation roof profiles are 100% water tight, ideal for tropical weather, versatile on design, wider support spacing, one single piece continuous length and roll forming at site. En. Zaidi also shared with the participants some case studies before ending his presentation.

At the end of the talk, there were questions raised by the participants which Mr Jack and En Zaidi answered and clarified in more details.

1 of the presentation slides