

Test Project

Information Network Cabling

Module 4

Speed Test

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Introduction

This Test Project consists of the following documents/files, which are provided as digital files:

- WSC2022SE_TP02_M4_actual_en.pdf (This document).

Description of project and tasks

Optical fiber fusion splicing is one of the most important and highest skills for installation of optical fiber cabling systems. As fusion is a most frequently implemented work, if speed of splicing work is slow, it gives significant impact to the working hours, and consequently, substantially affects the quality of whole optical fiber cable system.

This Module is a challenging competition on how fast and how good in quality the optical fibers are spliced.

Instructions to the Competitor

The competition time is 45 minutes for splicing and testing. The first 30 minutes is for fusion splicing. The last 15 minutes are for OTDR testing and reporting. Preparatory work for optical cables is not included in this competition time.

The method of the competition is as follows:

1. Preparatory Work

Preparation for optical cables during familiarization:

- (a) Remove the jackets and loose tubes from the optical fibers.
- (b) Clean off the jells of the optical fibers to remove stickiness. Or it will suffice if Competitors themselves prepare necessary number of optical fibers ready for fusion splicing.
- (c) Preparation before the competition:
- (d) Fix the optical fibers to the table following the instructions. The number of cables should be introduced one on each side to allow 48 connections. However, Competitors who wish to make more connections may install two cables each.
- (e) Put the optical fibers in a condition ready for splicing, while protecting them properly. Coating-removal and color-coding of the optical fibers are prohibited.
- (f) Fusion splice the pigtail cord to No.1 fiber.
- (g) Test the fusion splicer, including electric discharge check.
- (h) Competitors may soak wiping paper in alcohol in advance.
- (i) Competitors may conduct trial splicing.

2. Splicing

- (a) Splicer and cleaver to use are restricted to ones provided or approved by the organizer.
- (b) Splicer and cleaver must be on the table while working.
- (c) Make loopback connection, so that the light coming in through the entrance goes through all the spliced optical fibers.
- (d) Before completing the competition, be sure to connect a tail cord to the end of the optical fiber, and then, connect it to the corresponding port. If tail cords couldn't be connected, any of the splices may not be counted.
- (e) Competitors can freely choose color-codes for optical fibers.
- (f) Clean the fiber with new wipers at least 3 times every time after removing the fiber jacket.
- (g) Clean the optical fiber remover every time upon splicing.

- (h) Clean optical fiber cleaver and fusion splicer whenever deemed necessary, in order not to affect the connection quality.
- (i) Use one fusion splicer and one hot machine. However, it is possible to bring extras in the competition for any unexpected accidents. Note that if such accidents occurred due to mishandling and/or inappropriate maintenance by a Competitor, point(s) may be deducted from his/her marks.
- (j) Attach heat-shrinkable sleeves properly to the optical fiber connecting parts.
- (k) Competitors can use a Visual Fault Locator during the speed test.

3. OTDR test and report

- (a) OTDR test and save the result.
- (b) Uploading to the system (<https://skill02worldskills.com/>).

Equipment, machinery, installations, and materials required

Materials and equipment not listed in the infrastructure list are not used in this module.

Marking Scheme

The important point of this Module is to fusion splice as many as possible optical fibers within the limited time. It is the matter of course that the right procedure and method must be taken for this purpose.

Total marking score is "X points."

Other

Competitors must comply with the matters prescribed in the competition guideline 2022SE.