



## BICSI Registered Communications Distribution Designer

# Pre-Training Assessment of Current Knowledge and Experience

This basic assessment is intended to provide training and development guidance for those who want to become BICSI Registered Communications Distribution Designers (RCDD®). RCDD is a designation for individuals who demonstrate expertise in the design, integration, and implementation of telecommunications (voice, data, video, audio, and other low-voltage control) transport systems and their related infrastructure components.

This assessment will take about 30 minutes to complete. After completing the assessment and the scoring analysis sheet, you will know what areas you need to study prior to coming to classes. You will also know which training classes to take in order to have the best chance of passing the RCDD examination the first time.

If you are taking the RCDD exam, or taking the 3-day RCDD exam review course immediately prior to the exam, you should plan on investing a minimum of 50 to 100 hours of independent study of the most recent edition of the *Telecommunications Distribution Methods Manual (TDMM)* prior to the exam or review class.

If you are not taking the RCDD exam or plan to take it at a later date, we recommend a minimum of 20 hours of pre-class study of the *TDMM* prior to attending class. Your pre-class study should focus on areas where you had low scores (less than 10 points out of 15 per chapter) on this assessment.

The assessment is designed to help you prepare for BICSI design classes and will not necessarily indicate your ability to pass the RCDD examination.

Further information about BICSI conferences, seminars, publications, and professional registration programs (including the RCDD exam application) is available on BICSI's Web site at [www.bicsi.org](http://www.bicsi.org), or by calling the BICSI office at 800-242-7405 or 813-979-1991.

# Assessment Instructions

Each assessment section has three parts:

- 1) a question taken directly from each *TDMM* chapter
- 2) an honest estimation of your overall knowledge level about the topic
- 3) an honest estimation of your work experience regarding the topic

In each section of the assessment:

**Step #1** Answer the question in each section. (Do *NOT* look up the answers yet!)

**Step #2** Evaluate your knowledge of the topic and write your score in the box (from 1 to 5—see scoring instructions below).

**Step #3** Evaluate your work experience regarding the topic and write your score in the box (from 1 to 5—see scoring instructions below). Do these three steps now, then score the results starting with Step #4.

## To score and evaluate your *knowledge* level:

- |          |   |
|----------|---|
| 1 point  | if you have no knowledge about this item                            |
| 2 points | if you have heard of the item but have no in-depth knowledge        |
| 3 points | if you have average knowledge of this item (use at least monthly)   |
| 4 points | if you have above average knowledge of this item (use weekly/daily) |
| 5 points | if you know enough about this item to teach it to others            |

## To score and evaluate your design *experience* level:

- |          |   |
|----------|---|
| 1 point  | if you have no hands-on experience in the design or installation of this item   |
| 2 points | if you have some hands-on exposure and some knowledge of the design/installation of this item   |
| 3 points | if you have worked with co-workers to successfully complete the design of the item more than once   |
| 4 points | if you have performed the design of this item by yourself on multiple occasions over the past two (2) years   |
| 5 points | if you have performed the design of this item and have instructed or been responsible for inspecting the designs of others for at least two (2) years |

**Step #4** Using the attached answer sheet, grade your answers to the questions. If you have the correct answer, write a 5 in the appropriate answer block on the analysis sheet, partially correct answer = 3 points, and an incorrect answer = 1 point.

**Step #5** Transfer your knowledge and experience scores to the section boxes on the analysis sheet.

**Step #6** For each chapter section, add the sum total of your answer score, your knowledge score, and your work experience score. Enter this score in the section sum total box (maximum possible is 15 points - minimum is 3 points per section).

Go through this process for each chapter section.

**Step #7** After you have added the sum total score for each section on both sides of the analysis sheet, go back and circle the sections with the lowest total sum scores. If the score for a particular section is less than 10 points, you need further study before attending the class.

**Step #8** Add the sum total scores for all sections and enter this in the box at the bottom of the analysis sheet.

# Assessment Instructions (continued)

One side of the analysis scoring sheet is for “core” chapters of the *TDMM* and the other side is for “non-core” chapters. 85% of the RCDD exam is based on the core chapters and 15% on the non-core chapters. Be sure to study the non-core chapters!

**If the sum for core chapters score total at the bottom of the analysis sheet is:**

- greater than 200, we recommend training solution #1
- between 150-199, we recommend training solution #2
- less than 150, we recommend training solution #3

**If the sum for non-core chapters score total at the bottom of the analysis sheet is:**

- greater than 150, we recommend training solution #1
- between 100-149, we recommend training solution #2
- less than 100, we recommend training solution #3

**The following training solutions are general recommendations. You may need more or less preparation depending on your specific situation.**

## **Training Solution #1**

- DD200: Telecommunications Distribution Systems Review (3 days)
- Minimum of 50 hours of independent study of the *TDMM* prior to taking the RCDD examination

## **Training Solution #2**

- DD102: Designing Telecommunications Distribution Systems course (6 days)
- DD200: Telecommunications Distribution Systems Review (3 days)
- Minimum of 75 hours of independent study of the *TDMM* prior to taking the RCDD examination

## **Training Solution #3**

- DD100: Introduction to Voice/Data Cabling Systems or BICSI Apprentice, Installer, or Technician level training
- DD102: Designing Telecommunications Distribution Systems course (6 days)
- DD200: Telecommunications Distribution Systems Review (3 days)
- Minimum of 100 hours of independent study of the *TDMM* prior to taking the RCDD examination

**If specific item scores were low for:**

**Optical fiber**, we recommend you attend FO110: Fiber Optic Network Design (3 days).

**Grounding and bonding**, we recommend you attend DD120: Grounding and Protection Fundamentals for Telecommunications Systems (3 days).

**Local area networks**, we recommend you attend DA100: Introduction to LANs and Internetworks (3 days) and/or DA110: Designing LANs and Internetworks (5 days).

**Request for proposal**, we recommend you attend MM108: Telecommunications Project Management (3 days).

For information on these and other courses, consult the BICSI *Educational Resource Catalog*, BICSI’s Web site at [www.bicsi.org](http://www.bicsi.org), or call the BICSI office at 800-242-7405 or 813-979-1991.

# Core Areas

**Scoring System:**

1 = No knowledge/experience, 2 = Limited knowledge/experience, 3 = Average knowledge/experience, 4 = Weekly/daily knowledge/solo performance, 5 = Expert knowledge/experience

## Chapter 2 Codes, Standards, and Regulations

1. What is the difference between a code and a standard? \_\_\_\_\_

Knowledge	Experience
1-5	1-5

To what extent do you have knowledge and actual work experience conforming to the *National Electrical Code*<sup>®</sup>, ANSI/TIA/EIA standards, and federal regulations regarding telecommunications cabling?

## Chapter 4 Horizontal Cabling Systems

2. Name three types of cables recognized by the ANSI/TIA/EIA standards for use in horizontal cabling. \_\_\_\_\_, \_\_\_\_\_, and \_\_\_\_\_

Knowledge	Experience
1-5	1-5

To what extent do you have knowledge and actual work experience designing horizontal distribution systems including open ceiling, conduit, underfloor duct, etc.?

## Chapter 5 Building Backbone Systems

3. What is the recommended physical topology for backbone cabling systems? \_\_\_\_\_

Knowledge	Experience
1-5	1-5

To what extent do you have knowledge and actual work experience designing backbone cabling systems within commercial building structures?

## Chapter 6 Telecommunications Closets and Rooms

4. What are three factors to be considered in designing a telecommunications closet? \_\_\_\_\_

Knowledge	Experience
1-5	1-5

To what extent do you have knowledge and actual work experience designing telecommunications closets, including determining closet location, room sizing, backboard design, and patch panel/rack specification?

# Core Areas (continued)

**Scoring System:**

1 = No knowledge/experience, 2 = Limited knowledge/experience, 3 = Average knowledge/experience, 4 = Weekly/daily knowledge/solo performance, 5 = Expert knowledge/experience

## Chapter 7 Equipment Rooms

5. If there were fewer than 200 work areas, the equipment room serving those work areas must be no less than 18 meters square. True or False? \_\_\_\_\_

Knowledge	Experience
1-5	1-5

To what extent do you have knowledge and actual work experience designing equipment rooms, which include back-up power supplies, telecommunications common equipment, computer servers, and cross connects?

## Chapter 8 Telecommunications Service Entrance and Termination

6. If a building has a telecommunications requirement for 1,000 pairs at the service entrance, what size and how many entrance conduits are required? Size \_\_\_\_\_ # of conduits \_\_\_\_\_

Knowledge	Experience
1-5	1-5

To what extent do you have knowledge and actual work experience designing telecommunications service entrances including entrance conduit termination, network interfaces, electrical protectors, and underground entrance facilities?

## Chapter 11 Aerial Plant

7. The proper stringing tension for self supporting cable depends on three things. What are they? \_\_\_\_\_, \_\_\_\_\_, and \_\_\_\_\_

Knowledge	Experience
1-5	1-5

To what extent do you have knowledge and actual work experience designing aerial plant from a service provider termination point or interbuilding facility to a telecommunications service entrance?

## Chapter 12 Optical Fiber Recommendations

8. Are loose tube optical fiber cables used more for indoor or outdoor applications? \_\_\_\_\_

Knowledge	Experience
1-5	1-5

To what extent do you have knowledge and actual work experience designing optical fiber cabling systems within a building or campus environment?

# Core Areas (continued)

**Scoring System:**

1 = No knowledge/experience, 2 = Limited knowledge/experience, 3 = Average knowledge/experience, 4 = Weekly/daily knowledge/solo performance, 5 = Expert knowledge/experience

## Chapter 18 Miscellaneous and Special Situations

9. What is the typical life cycle in years for telecommunications cabling within an intelligent building? \_\_\_\_\_

Knowledge	Experience
1-5	1-5

To what extent do you have knowledge and actual work experience designing special services such as public telephones, TTY, ATM machines, and/or designing structured cabling for building automation systems?

## Chapter 20 Grounding, Bonding, and Electrical Protection

10. What size (AWG) should insulated copper bonding conductor wire be? \_\_\_\_\_

Knowledge	Experience
1-5	1-5

To what extent do you have knowledge and actual work experience designing grounding, bonding, and electrical protection systems for commercial buildings?

## Chapter 21 Electromagnetic Compatibility

11. In which document can you find separation requirements between telecommunications and other types of circuits? \_\_\_\_\_

Knowledge	Experience
1-5	1-5

To what extent do you have knowledge and actual work experience designing or modifying cabling systems where you had to overcome electromagnetic interference problems?

## Chapter 22 Firestopping

12. Regarding firestopping materials, define the term “intumescent.” \_\_\_\_\_

Knowledge	Experience
1-5	1-5

To what extent do you have knowledge and actual work experience designing both mechanical and non-mechanical firestopping systems for telecommunications cabling between walls, floors, and ceilings?

# Core Areas (continued)

**Scoring System:**

1 = No knowledge/experience, 2 = Limited knowledge/experience, 3 = Average knowledge/experience, 4 = Weekly/daily knowledge/solo performance, 5 = Expert knowledge/experience

## Chapter 23 Telecommunications Administration

13. On an entrance facility cross-connect field, what does the color “orange” designate? \_\_\_\_\_

Knowledge	Experience
1-5	1-5

To what extent do you have knowledge and actual work experience developing and implementing an administrative labeling and recordkeeping system for pathways, spaces, and cabling?

## Chapter 26 Principles of Transmission

14. Category 5 cable (according to ANSI/TIA/EIA standards) is acceptable for frequencies up to \_\_\_\_\_ megahertz?

Knowledge	Experience
1-5	1-5

To what extent do you have knowledge and actual work experience designing intrabuilding digital telecommunications transmission lines, using multiplexing and/or encoding?

## Chapter 27 Principles of Optical Fiber Transmission

15. Single-mode optical fiber systems normally use what type of transmitter? \_\_\_\_\_

Knowledge	Experience
1-5	1-5

To what extent do you have knowledge and actual work experience specifying optical fiber system component parameters such as fiber type, core size, bandwidth requirements, launched transmitter power, and receiver levels?

## Chapter 28 Local Area Networks

16. The 802.3 standard addresses which types of baseband and broadband networks? (Be specific) \_\_\_\_\_

Knowledge	Experience
1-5	1-5

To what extent do you have knowledge and actual work experience designing Ethernet and/or Token-ring local area networks at the physical layer of the OSI model?

# Non-Core Areas

**Scoring System:**

1 = No knowledge/experience, 2 = Limited knowledge/experience, 3 = Average knowledge/experience, 4 = Weekly/daily knowledge/solo performance, 5 = Expert knowledge/experience

## Chapter 9 Campus Backbone Systems

17. What are three categories of campus buildings which may need cabling? \_\_\_\_\_

Knowledge	Experience
<input type="text"/>	<input type="text"/>
1-5	1-5

To what extent do you have knowledge and actual work experience designing multi-building backbone systems in a campus environment?

## Chapter 10 Underground and Buried Cable

18. Cable pressurization is not needed where air-core PIC cables are used. True or False? \_\_\_\_\_

Knowledge	Experience
<input type="text"/>	<input type="text"/>
1-5	1-5

To what extent do you have knowledge and actual work experience designing underground and buried cable systems from a service provider termination point or interbuilding facility to a telecommunications service entrance?

## Chapter 13 Field Testing

19. What does the term "OTDR" mean? \_\_\_\_\_

Knowledge	Experience
<input type="text"/>	<input type="text"/>
1-5	1-5

To what extent do you have knowledge and actual work experience conducting field testing of copper and optical cabling?

## Chapter 14 Private CATV Distribution Systems

20. In private CATV systems, which type of coaxial connector is most common? \_\_\_\_\_

Knowledge	Experience
<input type="text"/>	<input type="text"/>
1-5	1-5

To what extent do you have knowledge and actual work experience designing private CATV systems?



# Non-Core Areas (continued)

**Scoring System:**  
 1 = No knowledge/experience, 2 = Limited knowledge/experience, 3 = Average knowledge/experience,  
 4 = Weekly/daily knowledge/solo performance, 5 = Expert knowledge/experience

## Chapter 15 Microwave Radio Systems

21. The FAA requires approval for any structure (i.e., microwave towers) in the proximity of airports with a height of \_\_\_\_\_ meters or \_\_\_\_\_ feet.

Knowledge	Experience
1-5	1-5

To what extent do you have knowledge and actual work experience designing microwave radio systems including route/site selection, tower/antenna selection, and calculating path profiles, fading, and propagation?

## Chapter 16 Residential Cabling

22. In residential facilities, twisted-pair backbone cable should accommodate a minimum of \_\_\_\_\_ pairs per living unit.

Knowledge	Experience
1-5	1-5

To what extent do you have knowledge and actual work experience designing residential telecommunications cabling systems in multi-tenant buildings?

## Chapter 17 Marinas

23. At a marina, if a boat dock has metallic support members extending into the lake or sea bottom, and the power service is grounded to those supports, is this considered an adequate ground for telecommunications service?

Knowledge	Experience
1-5	1-5

To what extent do you have knowledge and actual work experience designing telecommunications distribution systems for marinas?

## Chapter 19 Power Distribution

24. Name two types of battery cells commonly used for communications power back-up applications. \_\_\_\_\_ and \_\_\_\_\_

Knowledge	Experience
1-5	1-5

To what extent do you have knowledge and actual work experience designing power distribution systems for telecommunications equipment including battery back-up and uninterruptible power supplies?

# Non-Core Areas (continued)

**Scoring System:**

1 = No knowledge/experience, 2 = Limited knowledge/experience, 3 = Average knowledge/experience, 4 = Weekly/daily knowledge/solo performance, 5 = Expert knowledge/experience

## Chapter 24 Request for Quote

25. A performance bond ensures that the respondent will complete the work to the specifications in the RFQ. True or False? \_\_\_\_\_

Knowledge	Experience
1-5	1-5

To what extent do you have knowledge and actual work experience issuing requests for quotation and/or responding to requests for quotations for telecommunications cabling systems?

## Chapter 25 Construction Specifications

26. The distance from the horizontal cross-connect in the telecommunications closet to the outlet shall be \_\_\_\_\_ meters or ( \_\_\_\_\_ feet) or less.

Knowledge	Experience
1-5	1-5

To what extent do you have knowledge and actual work experience complying with construction specifications regarding separation of telecommunications cabling from electrical power, pipes, and railroad crossings?

## Chapter 29 Wireless Systems

27. Regarding multiplexing, what does FDMA mean? \_\_\_\_\_

Knowledge	Experience
1-5	1-5

To what extent do you have knowledge and actual work experience designing wireless telecommunications systems such as wireless PBX's, wireless local area networks, or personal communications networks?

## Chapter 30 Sound Systems

28. It is recommended that amplifiers in sound systems operate at no more than \_\_\_\_\_ % of their power rating?

Knowledge	Experience
1-5	1-5

To what extent do you have knowledge and actual work experience designing distributed sound systems in commercial buildings?

# Answers

By question number

All answers are from the 8th edition of the *TDMM*.

1. Codes protect life, health, property, and ensure quality of construction. Standards are established as a basis for comparison of capacity, quantity, content, extent, value, and quality. Chapter 2, pages 3-4.
2. 4-pair 100 ohm unshielded twisted-pair (UTP), 2 fiber 62.5/125 micron optical fiber cable, 2-pair 150 ohm shielded twisted-pair (STP). Chapter 4, page 9.
3. Star topology. Chapter 5, page 2.
4. Size of building, floor space served, and occupant needs. Chapter 6, page 1.
5. False. Chapter 7, page 10.
6. Size = 4 conduit, number of conduits = 1 plus 1 spare. Chapter 8, page 5.
7. Temperature, span lengths, and cable weight. Chapter 11, page 14.
8. Outdoor. Chapter 12, page 36.
9. 3-5 years. Chapter 18, page 23.
10. #6-AWG. Chapter 20, page 23.
11. Article 800-52 of *NFPA 70*. Chapter 21, page 25.
12. Firestopping material that expands when heated. Chapter 22, page 3.
13. Demarcation point. Chapter 23, page 20.
14. 100 MHz. Chapter 26, page 60.
15. Lasers. Chapter 27, page 10.
16. Ethernet 10BASE-5, 10BASE-2, 10BASE-T, 10BASE-F, or 10Broad36. Chapter 28, page 49.
17. Single tenant commercial, commercial/residential, multiple tenant commercial. Chapter 9, page 1.
18. False. Chapter 10, page 4.
19. Optical time domain reflectometer. Chapter 13, page 1.
20. F type connector. Chapter 14, page 5.
21. 61 meters or 200 feet. Chapter 15, page 8.
22. 2½ pairs. Chapter 16, page 11.
23. Yes. Chapter 17, page 4.
24. Alkaline, lead acid wet cells, or lead acid valve regulated cells. Chapter 19, page 40.
25. False. Chapter 24, page 7.
26. 90 meters or 295 feet. Chapter 25, page 9.
27. Frequency Division Multiple Access. Chapter 29, page 4.
28. 75%. Chapter 30, page 16.

QUESTION ANSWERED CORRECTLY = 5  
 QUESTION PARTIALLY CORRECT = 3  
 QUESTION ANSWERED INCORRECTLY = 1  
 KNOWLEDGE/EXPERIENCE = 1,2,3,4 OR 5  
 WORK EXPERIENCE = 1,2,3,4 OR 5

SCORING VALUES

# CORE TDMM CHAPTERS

		NO KNOWLEDGE/ EXPERIENCE 1	LIMITED KNOWLEDGE/ EXPERIENCE 2	AVERAGE KNOWLEDGE/ EXPERIENCE 3	WKLY/DAILY KNOWLEDGE/ PERFORMANCE 4	EXPERT KNOWLEDGE/ EXPERIENCE 5	SECTION SUM TOTAL	
QUESTION #	1							Codes, Standards, and Regulations CHAPTER 2
KNOWLEDGE								
WORK EXPERIENCE								
QUESTION #	2							Horizontal Cabling Systems CHAPTER 4
KNOWLEDGE								
WORK EXPERIENCE								
QUESTION #	3							Building Backbone Systems CHAPTER 5
KNOWLEDGE								
WORK EXPERIENCE								
QUESTION #	4							Telecommunications Closets and Rooms CHAPTER 6
KNOWLEDGE								
WORK EXPERIENCE								
QUESTION #	5							Equipment Rooms CHAPTER 7
KNOWLEDGE								
WORK EXPERIENCE								
QUESTION #	6							Telecommunications Service Entrance and Termination CHAPTER 8
KNOWLEDGE								
WORK EXPERIENCE								
QUESTION #	7							Aerial Plant CHAPTER 11
KNOWLEDGE								
WORK EXPERIENCE								
QUESTION #	8							Optical Fiber Recommendations CHAPTER 12
KNOWLEDGE								
WORK EXPERIENCE								
QUESTION #	9							Miscellaneous and Special Situations CHAPTER 18
KNOWLEDGE								
WORK EXPERIENCE								
QUESTION #	10							Grounding, Bonding, and Electrical Protection CHAPTER 20
KNOWLEDGE								
WORK EXPERIENCE								
QUESTION #	11							Electromagnetic Compatibility CHAPTER 21
KNOWLEDGE								
WORK EXPERIENCE								
QUESTION #	12							Firestopping CHAPTER 22
KNOWLEDGE								
WORK EXPERIENCE								
QUESTION #	13							Telecommunications Administration CHAPTER 23
KNOWLEDGE								
WORK EXPERIENCE								
QUESTION #	14							Principles of Transmission CHAPTER 26
KNOWLEDGE								
WORK EXPERIENCE								
QUESTION #	15							Principles of Optical Fiber Transmission CHAPTER 27
KNOWLEDGE								
WORK EXPERIENCE								
QUESTION #	16							Local Area Networks CHAPTER 28
KNOWLEDGE								
WORK EXPERIENCE								
<b>SUM OF CHAPTERS SCORE TOTAL</b>								<b>MAX FOR SECTION SUM TOTAL = 240</b>

QUESTION ANSWERED CORRECTLY = 5  
 QUESTION PARTIALLY CORRECT = 3  
 QUESTION ANSWERED INCORRECTLY = 1

KNOWLEDGE/EXPERIENCE = 1,2,3,4 OR 5  
 WORK EXPERIENCE = 1,2,3,4 OR 5

## NON-CORE TDMM CHAPTERS

SCORING VALUES →

			NO KNOWLEDGE/ EXPERIENCE <b>1</b>	LIMITED KNOWLEDGE/ EXPERIENCE <b>2</b>	AVERAGE KNOWLEDGE/ EXPERIENCE <b>3</b>	WKLY/DAILY KNOWLEDGE/ PERFORMANCE <b>4</b>	EXPERT KNOWLEDGE/ EXPERIENCE <b>5</b>	SECTION SUM TOTAL	
QUESTION #	17								Campus Backbone Systems CHAPTER 9
KNOWLEDGE									
WORK EXPERIENCE									
QUESTION #	18								Underground and Buried Cable CHAPTER 10
KNOWLEDGE									
WORK EXPERIENCE									
QUESTION #	19								Field Testing  CHAPTER 13
KNOWLEDGE									
WORK EXPERIENCE									
QUESTION #	20								Private CATV Distribution Systems CHAPTER 14
KNOWLEDGE									
WORK EXPERIENCE									
QUESTION #	21								Microwave Radio Systems CHAPTER 15
KNOWLEDGE									
WORK EXPERIENCE									
QUESTION #	22								Residential Cabling  CHAPTER 16
KNOWLEDGE									
WORK EXPERIENCE									
QUESTION #	23								Marinas  CHAPTER 17
KNOWLEDGE									
WORK EXPERIENCE									
QUESTION #	24								Power Distribution  CHAPTER 19
KNOWLEDGE									
WORK EXPERIENCE									
QUESTION #	25								Request for Quote  CHAPTER 24
KNOWLEDGE									
WORK EXPERIENCE									
QUESTION #	26								Construction Specifications CHAPTER 25
KNOWLEDGE									
WORK EXPERIENCE									
QUESTION #	27								Wireless Systems  CHAPTER 29
KNOWLEDGE									
WORK EXPERIENCE									
QUESTION #	28								Sound Systems  CHAPTER 30
KNOWLEDGE									
WORK EXPERIENCE									
<b>SUM OF CHAPTERS SCORE TOTAL</b>									MAX FOR SECTION SUM TOTAL = 180