



*AllenFace
Korea*

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Random Traffic Floor Free Movement TR34 4rd Edition FM3

인천 도화 물류센터

검수의뢰자 : **HEB**

검수회사 :

ALLENFACE KOREA

서울시 강남구 봉은사로 326, 9층 985호(역삼동, 남전빌딩)

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Random Traffic for F-Number Area

Survey Testing Result Report index

1. 검수 계약 사항 Information

2. F-number 의 정의

3. F-Number Certification

4. Survey Report

4.1 구간별 F umber Analysis Summary

4.2 구간별 Individual Slabs F Number

& TR34 4rd Edition FM3 Conversion

별첨. 바닥 평탄도 검수 Survey Plan (A3 CAD도면)

Information



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이천 도화 물류센터 Free movement에 대한 평탄도 검수에 대한 자세한 내용은 다음과 같습니다.

의뢰자 : HEB 시공사 : -

미장마감공사 : HEB

프로젝트명 : 이천 도화 물류센터

주소 : -

검수면적 : 4층(5,382 m²)

검수기준 : TR34 4rd Edition "FM3 기준값 적용"

TR34 3rd Edition convert into FF/FL								
등급	Property II		Property IV		OAFF	O AFL	MLFF	MLFL
	95%(mm)	100%(mm)	95%(mm)	100%(mm)	Number	Number	Number	Number
FM1	2.5	4.0	4.5	7.0	31	47	18.6	28.2
FM2 Special	3.0	4.5	6.5	10.0	26	32	15.6	19.2
FM2	3.5	5.5	8.0	12.0	22	26	13.2	15.6
FM3	5.0	7.5	10.0	15.0	15	21	9	12.6

Survey from : 2024.02.06

Test Equipment :

D-meter Recalibration by 098(2025.07.17), 257(2025.01.25), 448(2024.06.15), 635(2025.10.19) Metric(300mm Step) Model Downloading D-Meter (S/N 098, 257, 448, 635) manufacturer by Allen Face & Company, LLC of Wilmington, USA

Test measurement standard & method: According to USA ASTM E1155M

D-Meter®
The World's Only Profiler
That Never Needs Zeroing
(and That Can Never
Under-Report FFs)



D-Meter®
The World's Only Profiler That Never Needs Zeroing
(and That Can Never Under-Report FFs)



What are F-Numbers ?

The F-Number System (ASTM E-1155) is a rational, comprehensive, and extraordinarily effective methodology for specifying and controlling both floor flatness and levelness in all situations where the traffic patterns are unconstrained.

F-Numbers replace all forms of the traditional “gap under the straightedge” type tolerance, since every such format - regardless of wording – is known to be incompetent per force. For reasons that quickly become obvious upon use, F-Numbers are also much superior to both the TR-34 Property II and Property IV Free Movement and the DIN 18202 5.4 Table 3 specification formats.

As explained below, both those systems suffer from serious practical problems owing to their inflexibility, unreality, and failure to address equitable remedy.

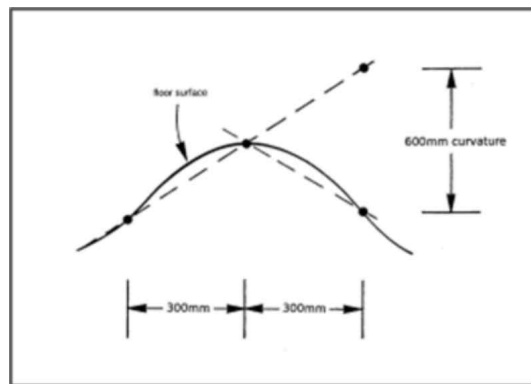
The rules for collecting the F-Number data, making the F-Number calculations, and reporting the F-Number results are all set forth in ASTM E 1155M: Standard Test Method for Determining FF Floor Flatness and FL Floor Levelness Numbers (Metric).

Basic properties of flatness and levelness

F-Numbers and TR34 rely on the same basic properties of flatness and levelness. Flatness is based on the floor's curvature over a 600mm span (Figure 1).

In the F-Number system, this is called 600mm curvature or q . TR34 called, it Property II in Editions 1-3, but changed the name to Property F in Edition 4.

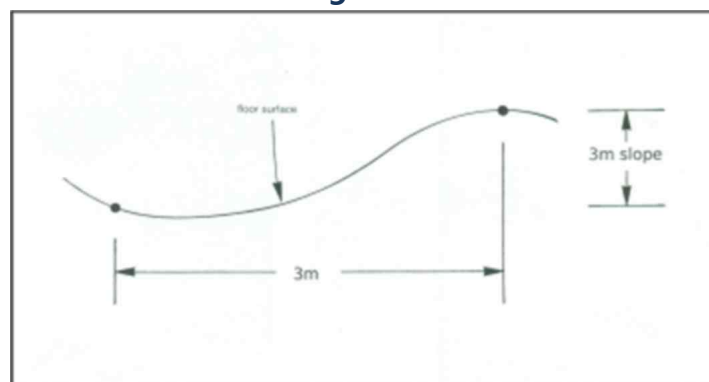
Figure 1



600mm curvature, the basic property of flatness

Levelness is based on the floor's slope over a span of 3m as shown below in Figure 2. In the F-Number system, this is called the 3m slope or z . TR34 called it Property IV in Editions 1-3, but changed the name to Property E in Edition 4.

Figure 2



3m slope, the basic property of floor levelness

These basic properties in the F-Number and TR34 systems are not merely similar. They are exactly the same.

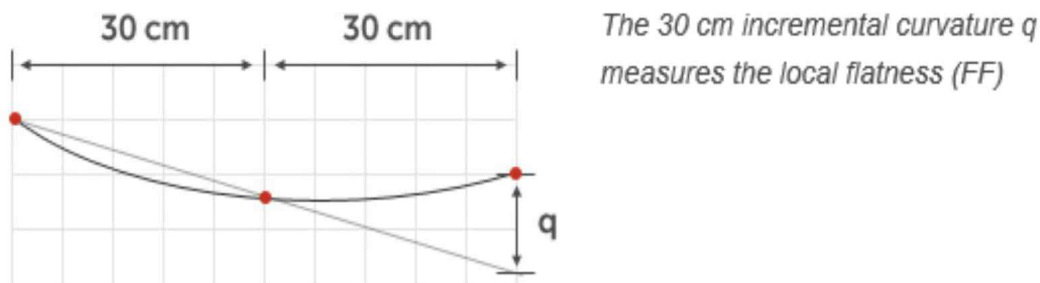
600mm curvature, Property II, and Property F are just different names for the same thing. Likewise, 3m slope, Property IV, and Property E are all synonymous.

F 넘버란 무엇인가?

F number 시스템은(ASTM E-1155)은 자유로운 주행 패턴의 모든 상황에 대한 평탄도(FF)와 레벨도(FL)를 확인하고 조정하기 위한 합리적이고, 종합적이며 특별히 효과적인 방법론 입니다. F number 계산을 위한 F number 데이터 수집과 F number 결과값에 대한 보고서에 따른 규칙은 ASTM E1155 M (FF -바닥 평탄도와 FL - 바닥 레벨도 넘버를 결정하는 테스트 표준 방법)과 ACI 117에 준합니다.

평탄도와 레벨도의 기본 특징

F number 평탄도(FF값)는 600mm 사이 바닥의 굴곡 (그림 1)에 기초를 두고 있습니다. F number 시스템에서 600mm 굴곡률을 q 라고 명기합니다.

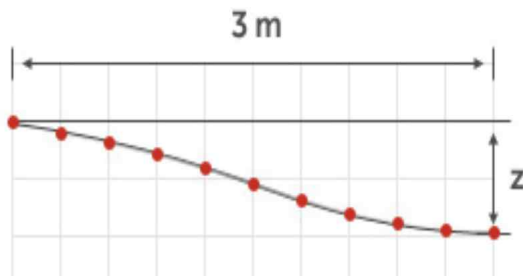


F number 레벨도(FL값)는 3M 간격 바닥 경사면 (그림2)에 기초를 두고 있습니다. F number 시스템에서 3M 경사면을 Z 라고 명기합니다.



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The 3 m elevation difference z measures
the local levelness (FL)

D-Meter® F-Meter® ScreedRail® ALLEN FACE & COMPANY, LLC	D-Meter® F-Meter® ScreedRail® ALLEN FACE & COMPANY, LLC	D-Meter® F-Meter® ScreedRail® ALLEN FACE & COMPANY, LLC
<p>338 ARROWHEAD DRIVE GALBERTS, IL 60138 TEL: 334-899-8000 FAX: 334-844-0325 WEB: www.allenface.com</p> <p>D-Meter Calibration Certificate</p> <p>D-Meter Serial Number: 98 Date Calibrated: 7/17/2023</p> <p>Slope Sensor Offsets: OK Test Track Confirmation: OK Download to PC: OK All Other Systems: OK</p> <p><i>Scott Wineka</i></p>	<p>338 ARROWHEAD DRIVE GALBERTS, IL 60138 TEL: 334-899-8000 FAX: 334-844-0325 WEB: www.allenface.com</p> <p>D-Meter Calibration Certificate</p> <p>D-Meter Serial Number: 257 Date Calibrated: 1/13/2023</p> <p>Slope Sensor Offsets: OK Test Track Confirmation: OK Download to PC: OK All Other Systems: OK</p> <p><i>Scott Wineka</i></p>	<p>338 ARROWHEAD DRIVE GALBERTS, IL 60138 TEL: 334-899-8000 FAX: 334-844-0325 WEB: www.allenface.com</p> <p>D-Meter Calibration Certificate</p> <p>D-Meter Serial Number: 635 Date Calibrated: 10/19/2023</p> <p>Slope Sensor Offsets: OK Test Track Confirmation: OK Download to PC: OK All Other Systems: OK</p> <p><i>Christian Vangel</i></p>
<p>D-Meter® F-Meter® ScreedRail® ALLEN FACE & COMPANY, LLC</p> <p>338 ARROWHEAD DRIVE GALBERTS, IL 60138 TEL: 334-899-8000 FAX: 334-844-0325 WEB: www.allenface.com</p> <p>D-Meter Calibration Certificate</p> <p>D-Meter Serial Number: 448 Date Calibrated: 6/15/2022</p> <p>Slope Sensor Offsets: OK Test Track Confirmation: OK Download to PC: OK All Other Systems: OK</p> <p><i>Scott Wineka</i></p> <p>Scott Wineka - Allen Face & Co. Lab Manager</p> <p>Note: Next Factory Calibration Should Be Performed On Or Before: 6/15/2024</p> <p>This Calibration Date Is Also Your Warranty Date For Your Meter.</p> <p>INSTANT PROFILE MEASUREMENT</p>	<p>Allen Face and Company LLC</p> <p>By: <i>Allen Face</i> Name: ALLEN FACE Title: MEMBER MANAGER</p> <p>ADDRESS: 2725 Old Wrightsboro Rd Bldg 12-5 Wilmington NC 28405, USA Telephone 910-763-4501 Attention: ALLEN FACE</p>	<p>ALLEN FACE KOREA</p> <p>By: <i>Taehyun Lee</i> Name: Mr. TAEHYUN LEE Title: Director</p> <p>ADDRESS 4F 401Ho, 416-7, Yeoksokro, Bucheon-si Kyenggi-do, Korea, Zip code 14607 Telephone 82-10-7242-0098 Attention: TAEHYUN LEE(TERRY)</p>
<p>◆ Certificate Technician ◆</p> <p><i>Certified F-Number Technician</i> Chicago 06/11/18 Taehyun Lee Allen Face Korea</p> <p><i>Certified F-Number Technician</i> Chicago 06/11/18 Taehyun Lee Allen Face Korea</p>		



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F-Number Certification

인천 도화 물류센터 Free movement에 대한 평탄도 검수에 대한 자세한 내용은 다음과 같습니다.

의뢰자 : HEB 시공사 : -

미장마감공사 : HEB

프로젝트명 : 인천 도화 물류센터

주소 : -

검수면적 : 4층(5,382 m²)

검수기준 : TR34 4rd Edition "FM3 기준값 적용"

Permit Limit

TR34 4rd Edition FM3 (FF 22.0 / FL 26.0)

Survey Result

TR34 4rd Edition FM3 (FF 46.4 / FL 29.1)

TR34 3rd Edition convert into FF/FL								
등급	Property II		Property IV		OAFF	O AFL	MLFF	MLFL
	95%(mm)	100%(mm)	95%(mm)	100%(mm)	Number	Number	Number	Number
FM1	2.5	4.0	4.5	7.0	31	47	18.6	28.2
FM2 Special	3.0	4.5	6.5	10.0	26	32	15.6	19.2
FM2	3.5	5.5	8.0	12.0	22	26	13.2	15.6
FM3	5.0	7.5	10.0	15.0	15	21	9	12.6

미국 F - Number Compliance

ALLENFACE KOREA hereby certifies the Random Traffic Floor 100% conform according to the contract floor Flatness(FF) & Levelness(FL) TR34 3rd Edition

FM2 specification. (See Summary)



Very truly yours,
Stamp by
ALLENFACE KOREA