



< TR34 3rd Edition Profilegraph



Prop F Meter / F-Speed Reader >



DIN Meter (DIN 18202) >



Our Family of Digital Floor Flatness Measuring Instruments...

Wheel Base Profilegraph (TR34 / Fmin / EN 15620) >



< DIN Profilegraph (DIN 15185)



Global Flooring Consultants...

Proving the World is **Flat...**

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FACE Consultants

Face Consultants Ltd are global flooring consultants and an independent testing organisation. We are world leading experts in the measurement, control and design of commercial and industrial concrete flooring. Operating worldwide with main offices in the UK, mainland Europe, Middle East, Asia, Australasia and Africa, Face Consultants are involved in over 5 million square metres of warehouse flooring every year – from design, supervision, testing, due diligence, construction, repair and upgrading.

Using the latest superflat high tolerance floor measuring technology, the FACE Digital Profilegraph or other FACE specialist digital flatness equipment that have been designed and developed in-house, Face Consultants offers floor flatness testing to TR34 standards, German (DIN), American (F-min), EN 15620 and VDMA Guideline.

As part of the global industrial flooring consortium, the CoGri Group, Face Consultants has access to a wealth of experience, knowledge and expertise for all your warehouse / industrial concrete floor requirements.



A high standard of floor flatness is an essential requirement for the safe and efficient operation of a narrow aisle forklift truck. The static lean table (right) indicates how the potential for truck lean is increased by the lifting height.

Static Lean Table

The table insert shows the static lean of a fork lift truck assuming the mast is rigid. Due to the engineering tolerances in the mast the dynamic force when the truck is moving this could increase the static lean by up to 3 times the figure shown. The centre to centre distance between the load wheels of the fork lift truck is: 1.2 metres.

H - Height of racking in metres	(E) - Difference in elevation between the left and right hand fork truck wheels mm.											
	3	4	5	6	7	8	9	10	11	12	13	14
6	15	20	25	30	35	40	45	50	55	60	65	70
6.5	16	22	27	33	38	43	49	54	60	65	70	75
7	18	23	29	35	41	47	53	58	64	70	75	80
7.5	19	25	31	38	44	50	56	63	69	75	81	87
8	20	27	33	40	47	53	60	67	73	80	86	92
8.5	21	28	35	43	50	57	64	71	78	85	92	99
9	23	30	38	45	53	60	68	75	83	90	97	104
9.5	24	32	40	48	55	63	71	79	87	95	102	110
10	25	33	42	50	58	67	75	83	92	100	108	116
10.5	26	35	44	53	61	70	79	88	96	105	114	122
11	28	37	46	55	64	73	83	92	101	110	119	128
11.5	29	38	48	58	67	77	86	96	105	115	124	133
12	30	40	50	60	70	80	90	100	110	120	130	140
12.5	31	42	52	63	73	83	94	104	115	125	135	145
13	33	43	54	65	76	87	98	108	119	130	140	150

Why Flatness is important

Correct floor flatness is essential for the following reasons:

- Operations are more efficient if lift trucks operate at maximum speed
- Poor surface regularity will cause excessive vibration on a lift truck and increase down time and maintenance
- Health and Safety and driver fatigue
- Reduced damage to stock
- Gives a control on the general quality of a floor when constructed

Undoubtedly the most important category of industry where flatness is essential is within aisles of high density warehouses where defined path, very narrow aisles trucks operate.

The static lean table below indicates how the potential for truck lean is increased by the lifting height.

Flatness & Levelness Testing

Face Consultants use the world's most advanced and accurate digital floor flatness testing equipment, designed and built in-house at its UK headquarters to test both Defined and Free Movement floors to all of the specifications commonly used globally.

Free movement floors, where materials handling equipment operates in random, non-defined directions, have an infinite number of travel paths. This type of floor is usually measured in accordance with one of the following flatness specifications:

Geographical Regions	Free Movement Floor Specifications	Measuring Instrument
UK and areas of UK influence	TR-34 4th Ed Free Movement Specification Table 3.1	Face Digital Property F Meter for testing Flatness
USA and areas of American Influence	ASTM F-number system	Face Digital F-Speed Reader
Germany	DIN 18202	Face Digital DIN meter
Europe	TR-34 4th Ed Free Movement Specification Table 3.1 / DIN 18202	Face Digital Property F Meter for testing Flatness / Face Digital DIN meter

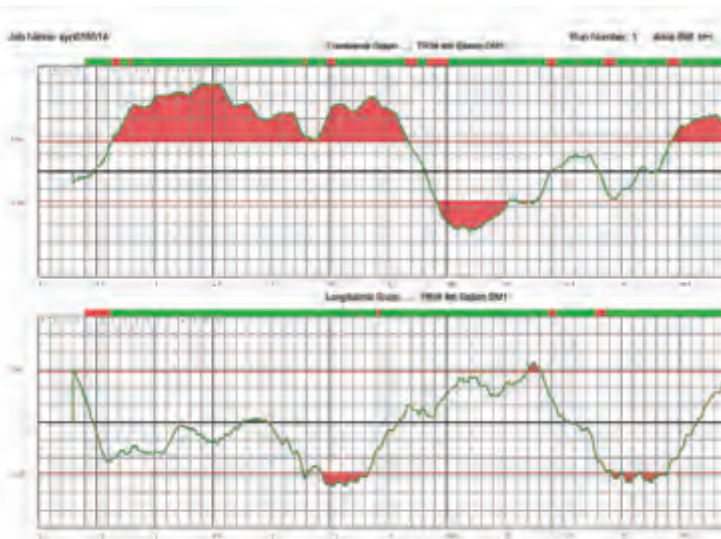
For **Defined Movement floors** where materials handling equipment operates in fixed paths, for example in Very Narrow Aisle (VNA) warehouses, floor flatness is measured using Face Profilegraphs of slightly different configurations. The decision on which specification to choose is usually geographical:

Geographical Regions	Defined Traffic Floors	Measuring Instrument
UK and areas of UK influence	TR-34 4th Ed Defined Movement Specification Table 3.2	Face TR-34 Profilegraph
USA and areas of American Influence	The ACI F-min numbersystem	Face F-min Profilegraph
Germany	DIN 15185/ EN 15620/ TR-34 4th Ed Defined Movement Specification Table 3.2	Face DIN Profilegraph/ Face TR-34 Profilegraph
Europe	DIN 15185/ EN 15620/ VDMA	Face DIN Profilegraph/ Face TR-34 Profilegraph/ Face FX Meter

The Face Profilegraph lies at the heart of modern Superflat floor technology. The self-propelled Face Digital Profilegraph travels along the narrow aisle, with its sensor wheels set to follow in the defined wheel paths of the forklift truck. The survey data then produces differential graphs relating to the longitudinal and transverse profiles of the floor.



Using the Profilegraph, we can measure continuous profiles of the forklift truck's defined wheel paths and highlight any areas that do not comply with the flatness specification. Corrective grinding can then be supervised to ensure the smooth operation of the forklift truck.

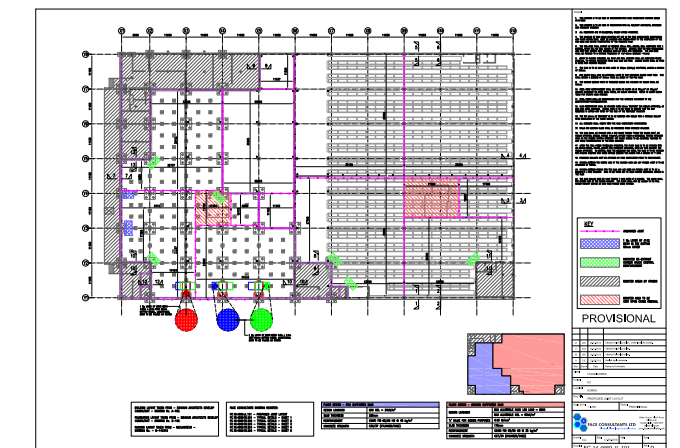


Structural Design & Design Review

Face Consultants offer a comprehensive Structural Design & Detailing service for industrial concrete ground floor slabs by applying more than 25 years of concrete flooring and logistics industry knowledge.

By applying the latest global standards, technology and industry knowledge Face Consultants provides Value Engineering designs which are carried out in house and supported by a substantial global professional indemnity insurance policy for peace of mind. Based on the Owner or End Users specific requirements, performance based Specifications, Structural Design and detailed Construction Drawings can be prepared for all types of Ground floor slabs including:- Slab on Grade (SOG), Steel Fibre only Reinforced Slab on Piles, Cold & Freezer Floors and Slabs for ASRS facilities.

In addition Design Review of existing designs can be carried out including a critical and independent appraisal of Specification, Structural, Jointing and other aspects.



Defect Investigation & Condition Surveys

Face Consultants is an experienced provider of Condition Surveys to the Property Industry. Anyone purchasing or leasing a Warehouse or Industrial property are advised to carefully check the condition and as built load capacity of the floor slabs before entering into any agreements, especially where loads are to be increased or the original slab design information is not available.



With direct concrete finish floors being a relatively new concept in China and with local codes for warehouse floors lacking, defects can quickly become apparent in newly constructed slabs. Face Consultants can provide Defects Investigations to determine cause and effect including recommendations for repair and upgrading.

Abrasion Resistance Testing

Abrasion Resistance is the ability of the concrete surface to resist wear caused by rubbing, rolling, sliding and cutting and is an important performance requirement in Warehouse and Industrial Floors. We provide in-situ abrasion resistance testing to assess the quality of your floor using the Face Accelerated AR Tester in accordance with the Specification of BS 8204-2:2003+A2:2011. Based upon the abrasion resistance results we can then produce advice and remedial measures to improve the durability of your floor.

Other Services

- Settlement Surveys
- Structural Appraisal to existing floors
- QA-QC Supervision
- Bespoke Flatness Specifications & Testing
- Crack Surveys
- Slip Resistance Testing
- Drop (Impact) Testing
- Pull Off / Screened Testing
- Expert Witness Services

