

ICAO AERODROME PAVEMENT WORKSHOP

Introduction to FAARFIELD 2.1

Presented to: ICAO Aerodrome Pavement Workshop
Dakar, Senegal

By: Dan Offenbacher P.E. Ph.D.

Date: 24 October 2024



**Federal Aviation
Administration**

The screenshot displays the FAARFIELD 2.1 software interface. The main window is titled "Structure" and shows a "Pavement Layers" table with the following data:

Material	Thickness (in.)	E (psi)	k (pci)	R (psi)
P-501 PCC Surface	14.0	4,000,000		650
P-401/P-403 HMA Stabilized	5.0	400,000		
P-209 Crushed Aggregate	6.0	75,000		
Subgrade		15,000	172.4	

Below the table, the "Design Life (Years)" is set to 20. The "Calculated Life (Years)" is shown as an empty field, and the "Total thickness to the top of the subgrade (in.)" is 25.0. A cross-section diagram of the pavement structure is visible on the right, with labels for each layer: P-501 PCC Surface (T=14.0 inches, R=650 psi), P-401/P-403 HMA Stabilized (T=5.0 inches, E=400,000 psi), P-209 Crushed Aggregate (T=6.0 inches, E=75,000 psi), and Subgrade (k=172.4 pci, E=15,000 psi).

The "Traffic" panel at the bottom shows a table of aircraft data:

Airplane Name	Gross Taxi Weight (lbs)	Annual Departures	Annual Growth (%)	Total Departures	CDF Contributions	CDF Max for Airplane	P/C Ratio	Tire Pressure (psi)	Percent GW on Gear	Tire Contact Width (in.)	Tire Contact Length (in.)	Tire Contact Area (in. ²)
S-30	30,000	8,000	0	160,000	0	0	0	75	0.95	12.3	19.7	190.0
Fokker-F-100	101,000	6,500	0	130,000	0	0	0	156	0.95	11.1	17.7	153.8
B737-300	140,000	5,000	0	100,000	0	0	0	201	0.95	11.5	18.4	165.4
B767-300 ER	413,000	3,200	0	64,000	0	0	0	200	0.95	14.0	22.4	245.2
A380-800 WV000	1,239,000	400	0	8,000	0	0	0	218	0.38	14.7	23.5	270.0
A380-800 WV000 Belly	1,239,000	400	0	8,000	0	0	0	218	0.57	14.7	23.5	270.0
B777-300	662,000	1,500	0	30,000	0	0	0	215	0.95	13.9	22.3	243.8

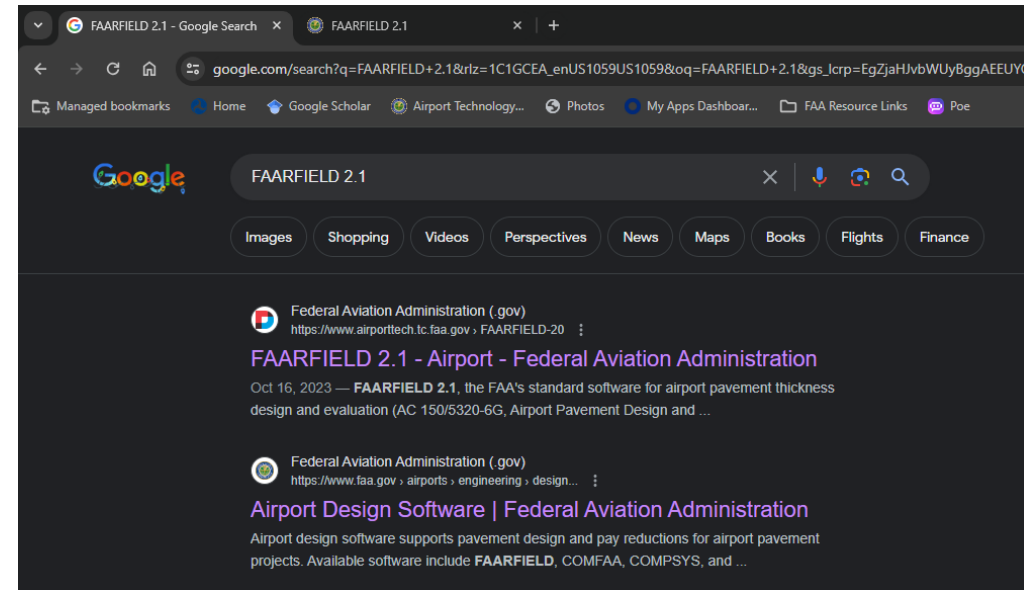
Download & Install FAARFIELD 2.1 Software



Download FAARFIELD 2.1

- **Link:** <https://airporttech.tc.faa.gov/Products/Airport-Safety-Papers-Publications/Airport-Safety-Detail/faarfield-21>
 - Alternate - Search “FAARFIELD 2.1”

FAARFIELD can only be installed on Windows OS



Download FAARFIELD 2.1

- **Click “Installation Files” to download**
 - Approximately 50 MB
 - Downloaded as compressed ZIP file
- **Source Code is also available at this webpage**

Monday, October 16, 2023

FAARFIELD 2.1

FAARFIELD 2.1 is the standard software accompanying the following FAA Advisory Circulars: AC 150/5320-6G - Airport Pavement Design and Evaluation, AC 150/5335-5D - Standardized Method of Reporting Pavement Strength - PCR

FAARFIELD 2.1, the FAA's standard software for airport pavement thickness design and evaluation (AC 150/5320-6G, Airport Pavement Design and Evaluation) and pavement strength reporting using the ACR/PCR method (AC 150/5335-6D, Standardized Method of Reporting Pavement Strength – PCR), features the following:


- Improved User Interface (UI) functionalities.
- The UI displays Slab Edge Stress and Slab Interior Stress for all aircraft in the Traffic mix, when performing Thickness Design or Life analysis of New Rigid pavement. The UI also shows the Most Demanding Aircraft.
- Performs Reduced Cross Section design for New Flexible and New Rigid.
- Enhanced capabilities to create and save Traffic Mix in the job file.
- Automatically downloads the most up-to-date aircraft library from PAVEAIR when users open the program.
- Improved ACR-PCR analysis.
- Modified information for numerous aircraft in the aircraft library.

Please note that:

- FAARFIELD stands for FAA Rigid and Flexible Iterative Elastic Layered Design. FAARFIELD 2.1 incorporates full 3D finite element responses to aircraft loads for new rigid pavements and rigid overlays. The 3D finite element models used for rigid pavement designs are computationally intensive and may result in long run times, depending on the computer characteristics. Your comments on this program and your suggestions for improvement are appreciated.
- FAARFIELD 2.1 is compatible with Windows™ operating systems. Windows 10 or higher is recommended. Installation instructions are available in the readme file.
- For questions, comments, or further information regarding this program, please contact [Dr. David R. Brill](#), FAA Airport Technology R&D Branch, ANG-E262.

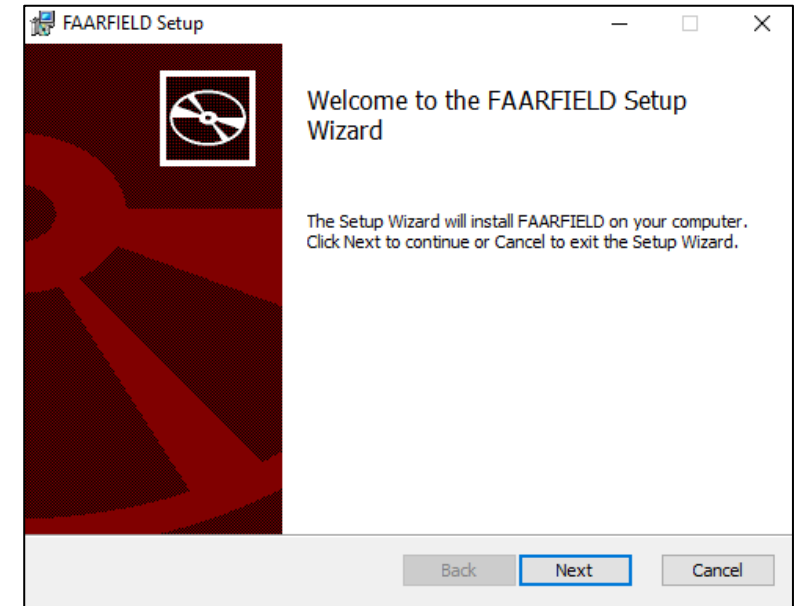
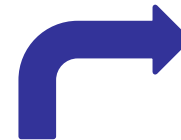
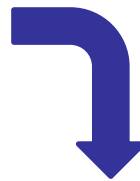
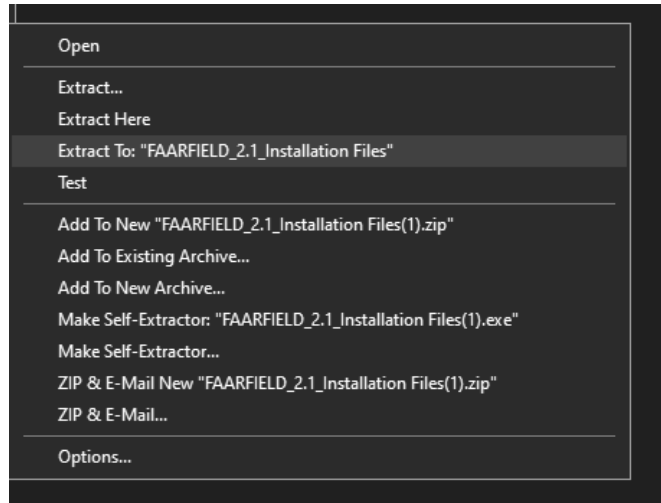
FAARFIELD 2.1 replaces all previous versions of FAARFIELD. To download the previous version FAARFIELD 1.42, use the following link: [FAARFIELD 1.42](#)



Documents to download

-  [FAARFIELD 2.1 readme](#)
-  [FAARFIELD_2.1_Installation Files](#)
-  [FAARFIELD_2.1_SourceCode](#)

Install FAARFIELD 2.1

- Extract the downloaded ZIP file
- Run .MSI file to begin installation



Name	Date modified	Type	Size
 FAARFIELD.Installer.msi	10/9/2023 3:09 PM	Windows Installer Packa...	52,092 KB
 FAARFIELD.Installer.wixpdb	10/9/2023 3:09 PM	WIXPDB File	594 KB

Install FAARFIELD 2.1

To confirm the installation, look for:

- FAARFIELD application on your desktop
- FAARFIELD in Windows menu
- *My FAARFIELD* folder in your Documents directory

