CF Industries Holdings, Inc. Form S-3ASR April 22, 2013

Use these links to rapidly review the document TABLE OF CONTENTS

Table of Contents

As filed with the Securities and Exchange Commission on April 22, 2013

Registration No. 333-

UNITED STATES SECURITIES AND EXCHANGE COMMISSION

WASHINGTON, D.C. 20549

FORM S-3

REGISTRATION STATEMENT UNDER THE SECURITIES ACT OF 1933

CF INDUSTRIES HOLDINGS, INC.

(Exact name of registrant as specified in its charter)

Delaware	20-2697511
(State or other jurisdiction of	(I.R.S. Employer
incorporation or organization)	Identification No.)

CF INDUSTRIES, INC.

(Exact name of registrant as specified in its charter)

Delaware	36-2097061
(State or other jurisdiction of	(I.R.S. Employer
incorporation or organization)	Identification No.)

4 Parkway North, Suite 400 Deerfield, Illinois 60015 (847) 405-2400

(Address, including zip code, and telephone number, including area code, of registrant's principal executive offices)

Douglas C. Barnard Senior Vice President, General Counsel, and Secretary

4 Parkway North, Suite 400 Deerfield, Illinois 60015 (847) 405-2400

(Name, address, including zip code, and telephone number, including area code, of agent for service)

Copies to:

Brian W. Duwe
Richard C. Witzel, Jr.
Gregg A. Noel
Skadden, Arps, Slate, Meagher & Flom LLP
155 North Wacker Drive
Chicago, Illinois 60606
(312) 407-0700

Approximate date of commencement of proposed sale to the public: From time to time after this registration statement becomes effective.

If the only securities being registered on this Form are being offered pursuant to dividend or interest reinvestment plans, please check the following box. o

If any of the securities being registered on this Form are to be offered on a delayed or continuous basis pursuant to Rule 415 under the Securities Act of 1933, other than securities offered only in connection with dividend or interest reinvestment plans, check the following box. ý

If this Form is filed to register additional securities for an offering pursuant to Rule 462(b) under the Securities Act, please check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering.

If this Form is a post-effective amendment filed pursuant to Rule 462(c) under the Securities Act, check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering. o

If this Form is a registration statement pursuant to General Instruction I.D. or a post-effective amendment thereto that shall become effective upon filing with the Commission pursuant to Rule 462(e) under the Securities Act, check the following box. \circ

If this Form is a post-effective amendment to a registration statement filed pursuant to General Instruction I.D. filed to register additional securities or additional classes of securities pursuant to Rule 413(b) under the Securities Act, check the following box. o

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, or a smaller reporting company. See the definitions of "large accelerated filer," "accelerated filer" and "smaller reporting company" in Rule 12b-2 of the Exchange Act.

Large accelerated filer ý Accelerated filer o Non-accelerated filer o Smaller reporting company o

(Do not check if a smaller reporting company)

CALCULATION OF REGISTRATION FEE

Proposed maximum
Title of each class of securities
Amount to be offering price per to be registered

Amount to be registered

Proposed maximum aggregate offering Amount of price(1) registration fee(2)

Securities of CF Industries Holdings, Inc.

Common stock, par value \$0.01 per share(3)

Preferred stock purchase rights(3)

Preferred stock, par value \$0.01 per share

Debt securities (5) \$0

Guarantees of debt securities of CF Industries, Inc.(4)

Securities of CF Industries, Inc.

Debt securities

- (1) Not specified pursuant to General Instruction II.E of Form S-3.
- (2) In accordance with Rule 456(b) and Rule 457(r), the registrants are deferring payment of all of the registration fee.
- Each share of CF Industries Holdings, Inc. common stock includes a right to purchase one one-thousandth of a share of Series A Junior Participating Preferred Stock pursuant to the Rights Agreement, dated as of July 21, 2005, as amended as of August 31, 2010 (the "Rights Agreement"), between CF Industries Holdings, Inc. and Mellon Investor Services LLC, as successor to The Bank of New York, as the Rights Agent (each such right a "Preferred Stock Purchase Rights"). The Preferred Stock Purchase Rights will not be exercisable or evidenced separately from the common stock of CF Industries Holdings, Inc. prior to the occurrence of events specified in the Rights Agreement. No separate consideration will be received by CF Industries Holdings, Inc. for the initial issuance of the Preferred Stock Purchase Rights.
- (4) No separate consideration will be received for the guarantees. Pursuant to Rule 457(n), no separate fee is payable with respect to the guarantees being registered hereby.
- An indeterminate amount or number of the securities of each identified class is being registered as may from time to time be issued at indeterminate prices or upon conversion, exchange or exercise of securities registered hereunder to the extent that the terms of any such securities provide for such conversion, exchange or exercise. Separate consideration may or may not be received for securities that are issuable on conversion, exchange or exercise of other securities.

PROSPECTUS

CF INDUSTRIES HOLDINGS, INC.

Common Stock Preferred Stock Debt Securities Guarantees of Debt Securities of CF Industries, Inc.

CF INDUSTRIES, INC.

Debt Securities

CF Industries Holdings, Inc., or CF Holdings, may offer and sell from time to time, in one or more offerings, in amounts, at prices and on terms determined at the time of any such offering:

shares of CF Holdings common stock;

shares of CF Holdings preferred stock;

debt securities of CF Holdings, which may be senior or subordinated, convertible or non-convertible and secured or unsecured; and

guarantees of debt securities of CF Industries, Inc., or CF Industries.

CF Industries may offer and sell from time to time, in one or more offerings, in amounts, at prices and on terms determined at the time of any such offering, debt securities of CF Industries, which will be non-convertible, may be senior or subordinated and secured or unsecured and will be fully and unconditionally guaranteed by CF Holdings.

We will provide the specific terms of these securities in one or more supplements to this prospectus at the time of offering. You should read this prospectus and the accompanying prospectus supplement carefully before you make your investment decision.

CF Holdings common stock is listed on the New York Stock Exchange under the trading symbol "CF." Each prospectus supplement will indicate if the securities offered thereby will be listed on any securities exchange.

We may offer securities through underwriting syndicates managed or co-managed by one or more underwriters, or directly to purchasers. The prospectus supplement for each offering of securities will describe in detail the plan of distribution for that offering. For general information about the distribution of securities offered, see "Plan of Distribution" on page 19 of this prospectus.

Investing in these securities involves risks. You should carefully read and consider the risk factors included in our periodic reports, in the prospectus supplement relating to any specific offering of securities and in other documents that we file with the Securities and Exchange Commission. See "Risk Factors" on page 2 of this prospectus.

Neither the Securities and Exchange Commission nor any state securities commission has approved or disapproved of these securities or determined if this prospectus or any prospectus supplement is truthful or complete. Any representation to the contrary is a criminal offense.

The date of this prospectus is April 22, 2013.

TABLE OF CONTENTS

	Page
Certain Terms Used in this Prospectus	<u>i</u>
About this Prospectus	<u>ii</u>
About Us	<u>1</u>
Risk Factors	2
Forward-Looking Statements	<u>3</u>
<u>Use of Proceeds</u>	<u>5</u>
Ratio of Earnings to Fixed Charges and to Combined Fixed Charges and Preference Security Dividends	<u>5</u>
Description of Securities	<u>6</u>
Description of Capital Stock	7
Description of Debt Securities	<u>16</u>
Description of Guarantees of Debt Securities	<u>18</u>
Plan of Distribution	<u>19</u>
Legal Matters	<u>20</u>
Experts Expert	<u>20</u>
Where You Can Find More Information	21

CERTAIN TERMS USED IN THIS PROSPECTUS

In the following sections of this prospectus, unless otherwise stated or the context requires otherwise, "we," "us" and "our" refer to CF Industries Holdings, Inc. and its consolidated subsidiaries: "About this Prospectus," "About Us," "Risk Factors," "Forward-Looking Statements," "Use of Proceeds," "Ratio of Earnings to Fixed Charges and to Combined Fixed Charges and Preferred Stock Dividends" and "Where You Can Find More Information." In all other sections of this prospectus, unless otherwise stated or the context requires otherwise, "we," "us" and "our" refer to CF Industries Holdings, Inc. and not its consolidated subsidiaries. In this prospectus, unless otherwise stated or the context requires otherwise, "CF Holdings" refers to CF Industries Holdings, Inc. and not its consolidated subsidiaries.

i

ABOUT THIS PROSPECTUS

This prospectus is part of an "automatic shelf" registration statement that CF Holdings and CF Industries filed with the Securities and Exchange Commission, or the SEC, as "well-known seasoned issuers," as defined in Rule 405 under the Securities Act of 1933, as amended, or the Securities Act. Under this shelf registration process, CF Holdings or CF Industries may sell, from time to time, an indeterminate amount of any combination of its securities described in this prospectus in one or more offerings. This prospectus provides you with a general description of the securities CF Holdings and CF Industries may offer, which is not meant to be a complete description of each security. Each time that securities are offered, a prospectus supplement containing specific information about the terms of that offering will be provided, including the specific amounts, prices and terms of the securities offered. The prospectus supplement and any other offering material may also add to, update or change information contained in this prospectus or in documents we have incorporated by reference into this prospectus. We urge you to read both this prospectus and any prospectus supplement and any other offering material (including any free writing prospectus) prepared by or on behalf of CF Holdings or CF Industries for a specific offering of securities, together with additional information described under "Where You Can Find More Information" on page 21 of this prospectus. You should rely only on the information contained or incorporated by reference in this prospectus and any such prospectus supplement or other offering material. We have not authorized anyone to provide you with different information. We are not making an offer to sell or soliciting an offer to purchase these securities in any jurisdiction where the offer or sale is not permitted.

You should not assume that the information contained in this prospectus, any prospectus supplement and any related free writing prospectus or any document incorporated by reference is accurate as of any date other than the date on the front cover of the applicable document. Neither the delivery of this prospectus or any applicable prospectus supplement or other offering material (including any free writing prospectus) nor any distribution of securities pursuant to such documents shall, under any circumstances, create any implication that there has been no change in the information set forth in this prospectus or any applicable prospectus supplement or other offering material or in our affairs since the date of this prospectus or any applicable prospectus supplement or other offering material.

ABOUT US

We are one of the largest manufacturers and distributors of nitrogen and phosphate fertilizer products in the world. Our operations are organized into two business segments—the nitrogen segment and the phosphate segment. Our principal customers are cooperatives and independent fertilizer distributors. Our principal fertilizer products in the nitrogen segment are ammonia, granular urea, urea ammonium nitrate solution and ammonium nitrate. Our other nitrogen products include urea liquor, diesel exhaust fluid and aqua ammonia, which are sold primarily to our industrial customers. Our principal fertilizer products in the phosphate segment are diammonium phosphate and monoammonium phosphate.

CF Industries, Inc. is a direct, wholly-owned subsidiary of CF Holdings. Substantially all of our consolidated assets are held by CF Industries, Inc. and its subsidiaries.

Our principal executive offices are located outside of Chicago, Illinois, at 4 Parkway North, Suite 400, Deerfield, Illinois 60015. The telephone number of our principal executive offices is (847) 405-2400. Our Internet website address is http://www.cfindustries.com. The content of our website is not incorporated by reference in this prospectus, and you should not consider it a part of this prospectus.

1

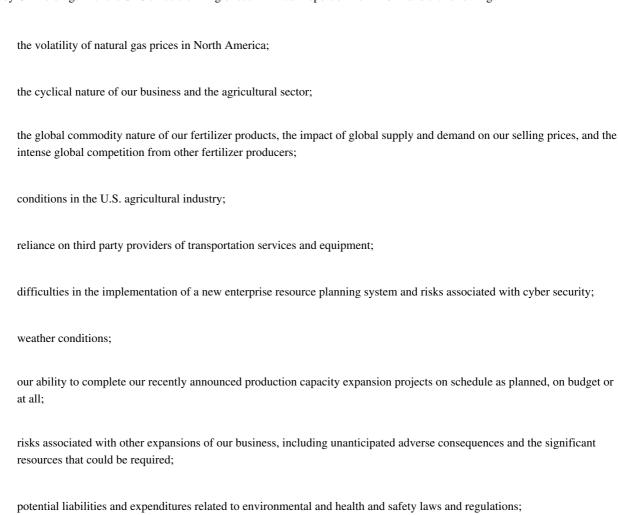
RISK FACTORS

Investing in securities of CF Holdings or CF Industries involves risk. Before you decide whether to purchase any securities of CF Holdings or CF Industries, in addition to the other information, documents or reports included or incorporated by reference into this prospectus and any prospectus supplement or other offering materials, you should carefully consider the risk factors in the section entitled "Risk Factors" in any prospectus supplement, in CF Holdings' most recent Annual Report on Form 10-K and any Quarterly Reports on Form 10-Q and Current Reports on Form 8-K filed by CF Holdings subsequent to such Annual Report on Form 10-K, as the same may be amended, supplemented or superseded from time to time by CF Holdings' filings under the Securities Exchange Act of 1934, as amended, or the Exchange Act, and in CF Holdings' other filings with the SEC. For more information, see the section of this prospectus entitled "Where You Can Find More Information." These risks could materially and adversely affect our business, financial condition or operating results and could result in a partial or complete loss of your investment.

FORWARD-LOOKING STATEMENTS

This prospectus and documents incorporated by reference in this prospectus, as well as oral statements we make from time to time, contain forward-looking statements, which are not statements of historical fact and are subject to risks, uncertainties and other factors that could cause our actual results to differ materially from those in the forward-looking statements. Forward-looking statements include statements related to analyses and other information that are based on forecasts of future results and estimates of amounts not yet determinable. Forward-looking statements may also relate to our future prospects, developments and business strategies. Forward-looking statements can generally be identified by their use of terms such as "anticipate," "believe," "could," "estimate," "expect," "intend," "may," "plan," "predict" or "project" and similar terms and phrases, including references to assumptions. Our forward-looking statements are made based on available competitive, financial and economic data, our expectations, estimates, forecasts and projections about the industries and markets in which we operate and management's beliefs and assumptions concerning future events affecting us. These statements are not guarantees of future performance and are subject to risks, uncertainties and factors relating to our operations and business environment, all of which are difficult to predict and many of which are beyond our control. Therefore, our actual results may differ materially from what is expressed in or implied by any forward-looking statements. We caution you not to place undue reliance on any forward-looking statements. Except as required by law, we undertake no obligation to update or revise any forward-looking statements.

Our actual results could differ materially from those expressed in or implied by forward-looking statements for many reasons, including, among others, the factors described in the sections entitled "Risk Factors" and "Management's Discussion and Analysis of Financial Condition and Results of Operations" in CF Holdings' most recent Annual Report on Form 10-K filed with the SEC and any Quarterly Reports on Form 10-Q filed by CF Holdings with the SEC since the filing of such Annual Report on Form 10-K and the following:



our potential inability to obtain or maintain required permits and governmental approvals or to meet financial assurance requirements from governmental authorities;

future regulatory restrictions and requirements related to greenhouse gas emissions;

3

Table of Contents

the seasonality of the fertilizer business;
the impact of changing market conditions on our forward sales programs;
risks involving derivatives and the effectiveness of our risk measurement and hedging activities;
the significant risks and hazards involved in producing and handling our products against which we may not be fully insured;
our reliance on a limited number of key facilities;
risks associated with joint ventures;
acts of terrorism and regulations to combat terrorism;
difficulties in securing the supply and delivery of raw materials, increases in their costs or delays or interruptions in their delivery;
risks associated with international operations;
losses on our investments in securities;
deterioration of global market and economic conditions;
our ability to manage our indebtedness;
loss of key members of management and professional staff; and
the other risks and uncertainties included from time to time in our filings with the SEC.
4

USE OF PROCEEDS

Unless otherwise set forth in a prospectus supplement, we intend to use the net proceeds of any offering of our securities for working capital and other general corporate purposes, including acquisitions, repayment or refinancing of debt, stock repurchases and other business opportunities. We will have significant discretion in the use of any net proceeds. We may provide additional information on the use of the net proceeds from the sale of our securities in an applicable prospectus supplement or other offering materials relating to the offered securities.

RATIO OF EARNINGS TO FIXED CHARGES AND TO COMBINED FIXED CHARGES AND PREFERENCE SECURITY DIVIDENDS

The following table sets forth our ratio of earnings to fixed charges for the periods indicated. No shares of CF Holdings preferred stock were outstanding during such periods. Accordingly, the ratio of earnings to combined fixed charges and preferred dividends is not separately stated from the ratio of earnings to fixed charges.

	Year Ended December 31,				
	2012	2011	2010	2009	2008
Ratio of earnings to fixed charges	13.1x	12.6x	3.5x	105.3x	171.9x

The ratio of earnings to fixed charges is calculated by dividing earnings, as defined in the applicable SEC rules, by fixed charges, as defined in the applicable SEC rules. For purposes of our computation of the ratio of earnings to fixed charges for the periods presented in the table above, our fixed charges are calculated as the sum of interest expense, including amortized premiums, discounts, and capitalized expenses related to indebtedness; capitalized interest; estimated interest in rent expense; and preference security dividend requirements of consolidated subsidiaries, and our earnings consist of (1) the sum of (a) pretax income from continuing operations before adjustment for noncontrolling interests in consolidated subsidiaries or equity in earnings or loss of unconsolidated affiliates, (b) fixed charges, (c) distributed income of equity investees and (d) amortization of capitalized interest, less (2) preference security dividend requirements of consolidated subsidiaries and capitalized interest.

DESCRIPTION OF SECURITIES

This prospectus contains summary descriptions of the CF Holdings common stock, preferred stock, preferred stock purchase rights, debt securities and guarantees of CF Industries debt securities that CF Holdings may offer and sell from time to time and of the CF Industries debt securities that CF Industries may offer and sell from time to time. These summary descriptions are not meant to be complete descriptions of each security. At the time of an offering and sale, this prospectus together with the accompanying prospectus supplement will contain the material terms of the securities being offered.

6

DESCRIPTION OF CAPITAL STOCK

The authorized capital stock of CF Holdings consists of 500,000,000 shares of common stock, par value \$0.01 per share, and 50,000,000 shares of preferred stock, par value \$0.01 per share, of which 500,000 have been designated Series A Junior Participating Preferred Stock. As of March 25, 2013, there were 60,612,937 shares of CF Holdings common stock outstanding and no shares of CF Holdings preferred stock outstanding.

The following description briefly summarizes certain information regarding the capital stock of CF Holdings. This information does not purport to be complete and is subject in all respects to and qualified in its entirety by reference to the applicable provisions of the General Corporation Law of the State of Delaware, or the DGCL, and CF Holdings' certificate of incorporation, bylaws and rights agreement. Copies of CF Holdings' certificate of incorporation, bylaws and rights agreement, which are incorporated by reference as exhibits to the registration statement of which this prospectus is a part, can be obtained as described under "Where You Can Find More Information."

Common Stock

The outstanding shares of our common stock are fully paid and nonassessable. The holders of our common stock are entitled to one vote for each share held of record on each matter submitted to a vote of stockholders, including the election of directors, and do not have any right to cumulate votes in the election of directors. The holders of our common stock have no preemptive rights and no rights to convert their common stock into any other securities. There are also no redemption or sinking fund provisions applicable to our common stock.

Subject to the rights and preferences applicable to any shares of our preferred stock outstanding at the time, holders of our common stock are entitled to receive dividends when and as declared by our board of directors from funds legally available therefor. In the event of any liquidation, dissolution or winding-up of our affairs, after payment of all of our debts and liabilities and subject to the rights and preferences applicable to any shares of our preferred stock outstanding at the time, the holders of our common stock will be entitled to receive the distribution of our remaining assets.

Our common stock is listed on the New York Stock Exchange under the symbol "CF." The transfer agent and registrar for the common stock is Computershare.

Preferred Stock

Our board of directors has the authority, without further action by the stockholders, to issue up to 50,000,000 shares of our preferred stock in one or more classes or series and to fix the following terms of the preferred stock:

the designation of each class or series;
the number of shares of each class or series, as well as the powers, preferences and rights, as well as the qualifications limitations or restrictions thereof;
dividends rights and the dividend rate, if any;
the rights and terms of conversion or exchange, if any;
the voting rights, if any;

the rights and terms of redemption (including sinking fund provisions), if any, and the redemption price; and

the rights of the class or series in the event of any voluntary or involuntary liquidation, dissolution or winding-up of our affairs.

Table of Contents

Any or all of these rights may be greater than the rights of our common stock. Our board of directors has designated 500,000 shares of preferred stock "Series A Junior Participating Preferred Stock," which shares are issuable upon events specified in our rights plan. See "Rights Plan."

Certain Provisions

Provisions of our certificate of incorporation, our bylaws and Delaware law, which are summarized below, may be deemed to have an anti-takeover effect and may delay, defer or prevent a tender offer or takeover attempt that a stockholder might consider in such stockholder's best interest, including those attempts that might result in a premium over the market price for our common stock.

Classified board of directors

Our certificate of incorporation provides for a board of directors divided into three classes, with one class to be elected each year to serve for a three-year term. The provision for a classified board makes it more difficult for stockholders to change the composition of our board of directors than if all of our directors were elected annually.

On December 11, 2012, our board of directors approved an amendment to our certificate of incorporation, subject to approval by our stockholders at the 2013 annual meeting of stockholders, to eliminate our classified board structure. If this amendment to our certificate of incorporation is approved by stockholders, starting with the 2013 annual meeting of stockholders, directors whose terms are expiring will stand for election for one-year terms, and beginning with our 2015 annual meeting of stockholders, all directors would be elected on an annual basis.

Number of directors; removal for cause; filling vacancies

Our certificate of incorporation provides that our board of directors will consist of not less than three nor more than fifteen members, the exact number of which will be fixed from time to time by our board of directors.

Under the DGCL, unless otherwise provided in the applicable corporation's certificate of incorporation, directors serving on a classified board may be removed by the corporation's stockholders only for cause. Our certificate of incorporation provides that directors may be removed from office at any time, but only for cause and only by the affirmative vote of the holders of at least two-thirds of the voting power of the issued and outstanding shares of our capital stock entitled to vote generally at an election of directors. Our certificate of incorporation and bylaws also provide that any newly created directorships on our board of directors may only be filled by a majority of the board of directors then in office, provided that a quorum is present, and any other vacancy occurring on the board of directors may only be filled by a majority of the board of directors then in office, even if less than a quorum, or by a sole remaining director. Any director elected in accordance with the provisions described in the preceding sentence will hold office for the remainder of the full term of the class of directors in which the new directorship was created or the vacancy occurred and until such director's successor shall have been elected and qualified. No decrease in the number of directors constituting the board of directors may have the effect of shortening the term of any incumbent director.

The director removal and vacancy provisions make it more difficult than it would be in the absence of such provisions for a stockholder to remove incumbent directors and gain control of our board of directors by filling vacancies created by such removal with such stockholder's own nominees.

On December 11, 2012, our board of directors approved an amendment to our certificate of incorporation, subject to approval by our stockholders at the 2013 annual meeting of stockholders, to eliminate our classified board structure. See "Certain Provisions Classified board of directors." If that amendment to our certificate of incorporation is approved by our stockholders, from and after the

Table of Contents

2015 annual meeting of stockholders, subject to the rights, if any, of the holders of shares of our preferred stock then outstanding, any director, or the entire board of directors, may be removed from office at any time, with or without cause, by the holders of a majority of the shares then entitled to vote at an election of directors.

Special meetings of stockholders

Our certificate of incorporation and bylaws deny stockholders the right to call a special meeting of stockholders. Our certificate of incorporation and bylaws provide that a special meeting of stockholders may be called only by our board of directors, our chairman of the board of directors or our president.

Stockholder action by written consent

Our certificate of incorporation requires all stockholder actions to be taken by a vote of the stockholders at an annual or special meeting and denies stockholders the ability to act by written consent without a meeting.

Stockholder proposals

At an annual meeting of stockholders, only business that is properly brought before the meeting will be conducted or considered. To be properly brought before an annual meeting of stockholders, business must be specified in the notice of the meeting (or any supplement to that notice), brought before the meeting by or at the direction of the board of directors (or any duly authorized committee of the board of directors) or properly brought before the meeting by a stockholder. For business to be properly brought before an annual meeting by a stockholder, the stockholder must:

be a stockholder of record on the date of the giving of the notice for the meeting and on the record date for the determination of stockholders entitled to notice of and to vote at the meeting; and

have given timely written notice of the business in proper written form to our Secretary.

To be timely, a stockholder's notice must be delivered to or mailed and received at our principal executive offices not less than 90 days nor more than 120 days prior to the anniversary date of the last annual meeting; provided, however, that in the event that the annual meeting is called for a date that is not within 30 days before or after the anniversary date, notice by the stockholder must be received not later than the close of business on the 10th day following the day on which notice of the date of the annual meeting was mailed or public disclosure of the date of the annual meeting was made, whichever first occurs.

To be in proper written form, a stockholder's notice to our Secretary must set forth (1) as to each matter such stockholder proposes to bring before the annual meeting a brief description of the business desired to be brought before the annual meeting and the reasons for conducting such business at the annual meeting and (2) as to the stockholder giving the notice and any Stockholder Associated Person (as defined below):

the name and address of such person;

the class or series and number of shares of our capital stock which are owned beneficially or of record by such person;

the nominee holder for, and number of, any shares owned beneficially but not of record by such person;

whether and the extent to which any hedging or other transaction or series of transactions has been entered into by or on behalf of, or any other agreement, arrangement or understanding

Table of Contents

(including any derivative or short positions, profit interests, options or borrowed or loaned shares) has been made, the effect or intent of which is to mitigate loss to or manage risk or benefit of share price changes for, or to increase or decrease the voting power of, such person with respect to any share of our stock;

to the extent known by the stockholder giving the notice or any Stockholder Associated Person, the name and address of any other stockholder supporting the proposal of business on the date of such stockholder's notice;

a description of all agreements, arrangements or understandings between or among such persons or any other person (including their names) in connection with the proposal of such business by such stockholder;

a description of any material interest of such person in such business;

a representation that the stockholder giving the notice intends to appear in person or by proxy at the annual meeting to bring such business before the meeting;

notice whether such person intends to solicit proxies in connection with the proposed matter; and

any other information relating to such stockholder or any Stockholder Associated Person that would be required to be disclosed in a proxy statement or other filings required to be made in connection with the solicitation of proxies pursuant to Section 14 of the Exchange Act and the rules and regulations promulgated thereunder.

Any information required pursuant to the provisions described in the immediately-preceding paragraph must be supplemented to speak as of the record date for the meeting by the stockholder giving the notice not later than 10 days after such record date. With respect to any stockholder, "Stockholder Associated Person" means (1) any person acting in concert, directly or indirectly, with such stockholder and (2) any person controlling, controlled by or under common control with such stockholder or any Stockholder Associated Person.

Similarly, at a special meeting of stockholders, only such business as is properly brought before the meeting will be conducted or considered. To be properly brought before a special meeting, business must be specified in the notice of the meeting (or any supplement to such notice) given by or at the direction of the board of directors, the chairman of our board of directors or our President.

Nomination of candidates for election to our board of directors

Under our bylaws, only persons who are properly nominated will be eligible for election to be members of our board of directors. To be properly nominated, a director candidate must be nominated at an annual meeting of stockholders or any special meeting called for the purpose of electing directors by or at the direction of our board of directors (or any duly authorized committee of the board of directors) or properly nominated by a stockholder. To properly nominate a person for election as a director, a stockholder must:

be a stockholder of record on the date of the giving of the notice for the meeting and on the record date for the determination of stockholders entitled to vote at the meeting; and

have given timely written notice in proper written form to our Secretary.

To be timely, a stockholder's notice must be delivered to or mailed and received at our principal executive offices:

in the case of an annual meeting, not less than 90 days nor more than 120 days prior to the anniversary date of our last annual meeting of stockholders; provided, however, that in the event

Table of Contents

that the annual meeting is called for a date that is not within 30 days before or after the anniversary date of the last annual meeting, notice by the stockholder must be received not later than the close of business on the 10th day following the day on which notice of the date of the annual meeting was mailed or public disclosure of the date of the annual meeting was made, whichever first occurs; and

in the case of a special meeting of stockholders called for the purpose of electing directors, not later than the close of business on the 10th day following the day on which notice of the date of such meeting was mailed or public disclosure of the date of the special meeting was made, whichever first occurs.

To be in proper written form, a stockholder's notice to our Secretary must be accompanied by a written consent of each proposed nominee to being named as a nominee and to serve as a director if elected and must set forth:

as to each person whom the stockholder proposes to nominate for election as a director:

the name, age, business address and residence address of the person;

the principal occupation or employment of the person;

the class or series and number of shares of our capital stock that are owned beneficially or of record by such person;

the nominee holder for, and number of, any shares owned beneficially but not of record by such person;

whether and the extent to which any hedging or other transaction or series of transactions has been entered into by or on behalf of, or any other agreement, arrangement or understanding (including any derivative or short positions, profit interests, options or borrowed or loaned shares) has been made, the effect or intent of which is to mitigate loss to or manage risk or benefit of share price changes for, or to increase or decrease the voting power of, such person with respect to any share of our stock; and

any other information relating to the person that would be required to be disclosed in a proxy statement or other filings required to be made in connection with the solicitation of proxies for election of directors pursuant to Section 14 of the Exchange Act and the rules and regulations promulgated thereunder; and

as to the stockholder giving the notice and any Stockholder Associated Person:

the name and address of such person;

the class or series and number of shares of our capital stock which are owned beneficially or of record by such person;

the nominee holder for, and number of, any shares owned beneficially but not of record by such person;

whether and the extent to which any hedging or other transaction or series of transactions has been entered into by or on behalf of, or any other agreement, arrangement or understanding (including any derivative or short positions,

profit interests, options or borrowed or loaned shares) has been made, the effect or intent of which is to mitigate loss to or manage risk or benefit of share price changes for, or to increase or decrease the voting power of, such person with respect to any share of our stock;

Table of Contents

to the extent known by the stockholder giving the notice or any Stockholder Associated Person, the name and address of any other stockholder supporting the nominees named in the stockholder's notice for election on the date of such stockholder's notice:

a description of all agreements, arrangements or understandings between or among such persons or any other person (including their names) pursuant to which the nominations are to be made by the stockholder;

a description of any relationship between or among the stockholder giving notice and any Stockholder Associated Person, on the one hand, and each proposed nominee, on the other hand;

a description of any material interest of such person in such nominations, including any anticipated benefit to such person therefrom;

a representation that the stockholder giving the notice intends to appear in person or by proxy at the meeting to nominate the persons named in its notice;

notice whether such person intends to solicit proxies in connection with the nominations; and

any other information relating to such stockholder or any Stockholder Associated Person that would be required to be disclosed in a proxy statement or other filings required to be made in connection with the solicitation of proxies for election of directors pursuant to Section 14 of the Exchange Act and the rules and regulations promulgated thereunder.

We may also require any proposed nominee to furnish such other information as may reasonably be required by us to determine the eligibility of such proposed nominee to serve as an independent director of CF Holdings or that could be material to a reasonable stockholder's understanding of the independence, or lack thereof, of such nominee. Any information required pursuant to the provisions described in this paragraph must be supplemented to speak as of the record date for the meeting by the stockholder giving the notice not later than 10 days after such record date.

Amendment of certificate of incorporation and bylaws

Our certificate of incorporation generally requires the approval of the holders of at least two-thirds of the voting power of the issued and outstanding shares of our capital stock entitled to vote generally at an election of directors to amend certain provisions of our certificate of incorporation described in this section. Our certificate of incorporation and bylaws provide that the holders of at least two-thirds of the voting power of the issued and outstanding shares of our capital stock entitled to vote generally at an election of directors have the power to amend or repeal our bylaws. In addition, our certificate of incorporation grants our board of directors the authority to amend and repeal our bylaws without a stockholder vote in any manner not inconsistent with the laws of the State of Delaware or our certificate of incorporation.

Rights Plan

Pursuant to the Rights Agreement, dated as of July 21, 2005, as amended as of August 31, 2010, between us and Mellon Investor Services LLC (as successor to The Bank of New York), as the Rights Agent, each share of our common stock has attached to it one preferred stock purchase right. As long as rights attach to our common stock, we will issue one right (subject to adjustment) with each new share of our common stock so that all shares of our common stock will have attached rights. When exercisable, each right entitles the holder to purchase one one-thousandth of a share of a series of our preferred stock designated as Series A Junior Participating Preferred Stock at an exercise price of \$90, subject to adjustment.

Table of Contents

Rights will only be exercisable under limited circumstances specified in the rights agreement when the distribution date with respect to the rights has occurred and the rights are no longer redeemable by us. The distribution date with respect to the rights would occur upon the earlier of the following, where the term "acquiring person" generally means a person or group that, together with its affiliates and certain other related persons, beneficially owns 15% or more (or, in the case of a person or group meeting certain criteria specified in the rights agreement, 20% or more) of the outstanding shares our common stock, other than as a result of repurchases of stock by us or certain inadvertent actions by certain stockholders as set forth in the rights agreement:

the close of business on the 10th business day following a public announcement that any person or group has become an acquiring person; and

the close of business on the 10th business day, or such later date as our board of directors may determine, after the date of the commencement or the date of first public announcement, whichever is earlier, of a tender offer or exchange offer that would result in any person or group becoming an acquiring person.

The rights will expire at 5:00 P.M. (New York City time) on July 21, 2015, unless this expiration date is extended or the rights are otherwise redeemed or exchanged at an earlier date.

If any person or group becomes an acquiring person, each right will entitle its holder, other than such acquiring person and its affiliates and certain other related persons and, under specified circumstances, transferees of the foregoing persons, all of whose rights will be null and void, to acquire a number of additional shares of our common stock having a market value of twice the exercise price of such right. If the distribution date with respect to the rights has been triggered based on the circumstances described in the first bullet point of the second paragraph under "Rights Plan," above, and we are involved in a merger or other business combination transaction of a type specified in the rights agreement, each right (other than rights that have become null and void as described in the immediately-preceding sentence) will entitle its holder to acquire, at the right's then-current exercise price, a number of shares of the acquiring or surviving company's common stock having a market value at that time of twice such right's exercise price.

At any time prior to the close of business on the 10th business day following a public announcement that a person or group has become an acquiring person, we may redeem the rights in whole, but not in part, at a price of \$.001 per right (adjusted as appropriate for any stock split, stock dividend or similar transaction), payable in cash, common stock or other consideration that we deem appropriate. Promptly upon our election to redeem the rights, the rights will terminate and the only right of the holders of rights will be to receive the redemption price.

At any time after a person or group becomes an acquiring person and prior to any person or group, together with its affiliates and certain other related persons, becoming the beneficial owner of 50% or more of the outstanding shares of our common stock, our board of directors may exchange the rights (other than rights that have become void as described above), in whole or in part, for one share of our common stock per right or for one one-thousandth of a share of our Series A Junior Participating Preferred Stock (or a share of a class or series of our preferred stock or other security having equivalent rights, preferences and privileges) per right, subject, in each case, to adjustment.

Until a right is exercised, the holder of the right, as such, will have no rights as a stockholder of CF Holdings, including, without limitation, no right to vote or to receive dividends. While the distribution of the rights will not be taxable to stockholders or to us, stockholders may, depending upon the circumstances, recognize taxable income in the event that the rights become exercisable for our common stock or other consideration or for common stock of the acquiring or surviving company or in the event of the redemption of the rights as set forth above.

Table of Contents

Any of the provisions of the rights agreement may be amended by our board of directors prior to the distribution date with respect to the rights. After the distribution date, the provisions of the rights agreement may be amended by our board of directors to cure any ambiguity, to correct or supplement any defective or inconsistent provision, to shorten or lengthen any time period or to make changes which do not adversely affect the interests of holders of rights (other than an acquiring person or its affiliates and certain other related persons). The foregoing notwithstanding, the rights agreement may not be amended, other than to cure an ambiguity or to correct or supplement a defective or inconsistent provision of the rights agreement, at a time when the rights are not redeemable.

The rights are designed to protect the interests of us and our stockholders against coercive takeover tactics and to encourage potential acquirors to negotiate with our board of directors before attempting a takeover. The preferred stock purchase rights theoretically could, but are not intended to, deter takeover proposals that might be in the best interests of our stockholders.

The foregoing description of the preferred stock purchase rights is not complete and is qualified in its entirety by reference to the rights agreement. Copies of the rights agreement, which is incorporated by reference as an exhibit to the registration statement of which this prospectus is a part, can be obtained as described under "Where You Can Find More Information."

Delaware Law

We are subject to the provisions of Section 203 of the DGCL regulating corporate takeovers. In general, those provisions prohibit a Delaware corporation from engaging in any business combination with any interested stockholder for a period of three years following the time that the stockholder became an interested stockholder, unless:

prior to that time, the board of directors approved either the business combination or the transaction that resulted in the stockholder becoming an interested stockholder;

upon consummation of the transaction that resulted in the stockholder becoming an interested stockholder, the interested stockholder owned at least 85% of the voting stock of the corporation outstanding at the time the transaction commenced; or

at or after that time, the business combination is approved by the board of directors and authorized at a meeting of stockholders by at least two-thirds of the outstanding voting stock that is not owned by the interested stockholder.

As defined in Section 203 of the DGCL, "business combination" generally includes the following:

mergers or consolidations involving the corporation and the interested stockholder;

sales, leases, exchanges, mortgages, pledges, transfers and other dispositions of 10% or more of the assets of the corporation involving the interested stockholder;

subject to certain exceptions, any transaction that results in the issuance or transfer by the corporation of any stock of the corporation to the interested stockholder;

transactions involving the corporation that have the effect of increasing the proportionate share of the stock of any class or series of the corporation which is owned by the interested stockholder; and

receipt by the interested stockholder of the benefit of any loans, advances, guarantees, pledges or other financial benefits provided by or through the corporation.

In general, Section 203 defines an interested stockholder as any entity or person beneficially owning 15% or more of the outstanding voting stock of the corporation and any entity or person

Table of Contents

affiliated with or controlling, controlled by, or under common control with any of these entities or persons.

Limitations on Liability and Indemnification of Directors and Officers

Our certificate of incorporation limits or eliminates the personal liability of our directors to the maximum extent permitted by the DGCL. The DGCL expressly permits a corporation to provide that its directors will not be liable for monetary damages for a breach of their fiduciary duties as directors, except for liability:

for any breach of the director's duty of loyalty to us or our stockholders;

for any act or omission not in good faith or that involves intentional misconduct or a knowing violation of law;

under Section 174 of the DGCL (relating to unlawful stock repurchases, redemptions or other distributions or payment of dividends); or

for any transaction from which the director derived an improper personal benefit.

These limitations of liability do not generally affect the availability of equitable remedies such as injunctive relief or rescission. Our certificate of incorporation and bylaws also authorize us to indemnify our officers, directors, employees and other agents to the fullest extent permitted under the DGCL, and we may advance expenses to our directors, officers, employees and other agents in connection with a legal proceeding, subject to limited exceptions.

As permitted by the DGCL, our certificate of incorporation and bylaws provide that:

we must indemnify our directors and officers to the fullest extent permitted by the DGCL and advance expenses to our directors and officers in connection with a legal proceeding, subject to limited exceptions; and

we may purchase and maintain insurance on behalf of our current or former directors, officers, employees or agents against any liability asserted against them and incurred by them in any such capacity, or arising out of their status as such.

We have entered into separate indemnification agreements with each of our directors and officers that require us to indemnify them to the fullest extent permitted by the DGCL. These indemnification agreements also require us to advance any expenses incurred by our directors and officers as a result of any proceeding against them as to which they could be indemnified.

The limited liability and indemnification provisions in our certificate of incorporation and bylaws and in the indemnification agreements we have entered into with our directors and officers may discourage stockholders from bringing a lawsuit against our directors for breach of their fiduciary duties and may reduce the likelihood of derivative litigation against our directors and officers, even though a derivative action, if successful, might otherwise benefit us and our stockholders. A stockholder's investment in us may be adversely affected to the extent we pay the costs of settlement or damage awards against our directors and officers under these indemnification provisions.

DESCRIPTION OF DEBT SECURITIES

As used in this "Description of Debt Securities" section of the prospectus, debt securities means the debentures, notes, bonds and other evidences of indebtedness that CF Holdings or CF Industries, as applicable, may issue from time to time. CF Holdings may offer secured or unsecured debt securities which may be senior or subordinated and which may be convertible or non-convertible. CF Industries may offer non-convertible secured or unsecured debt securities, which may be senior or subordinated and which will be fully and unconditionally guaranteed by CF Holdings. Unless otherwise specified in the applicable prospectus supplement, debt securities of CF Holdings will be issued in one or more series under an indenture to be entered into between CF Holdings and Wells Fargo Bank, National Association, as trustee, a form of which indenture is filed as an exhibit to the registration statement of which this prospectus is a part, and debt securities of CF Industries will be issued in one or more series under an indenture to be entered into among CF Industries, CF Holdings and Wells Fargo Bank, National Association, as trustee, a form of which indenture is filed as an exhibit to the registration statement of which this prospectus is a part.

The following description briefly summarizes certain general terms and provisions of the debt securities. The particular terms of the debt securities offered by any prospectus supplement and the extent, if any, to which the general terms and provisions described below may apply to such debt securities will be described in the applicable prospectus supplement. The terms of the debt securities will include those set forth in the applicable indenture and the applicable indenture supplement or company order, if any, and those made a part of the applicable indenture by the Trust Indenture Act of 1939, as amended, or the TIA. You should read the description below, the applicable prospectus supplement and the provisions of the applicable indenture and the applicable indenture supplement or company order, if any, in their entirety before investing in any of the debt securities. The statements and descriptions in this prospectus or in any prospectus supplement regarding terms and provisions of the applicable indenture, any applicable indenture supplement or company order and any debt securities are summaries thereof, do not purport to be complete and are subject to, and qualified in their entirety by reference to, all of the provisions of the applicable indenture and any such supplements, company orders and debt securities, including the definitions therein of certain terms.

Unless otherwise stated in the applicable prospectus supplement, the aggregate principal amount of debt securities that may be issued under the applicable indenture is unlimited. The debt securities may be issued in one or more series as may be authorized from time to time. The prospectus supplement relating to any series of debt securities will describe the specific terms of such debt securities. Unless otherwise stated in the applicable prospectus supplement, the issuer of debt securities of a particular series may issue additional debt securities of such series without the consent of the holders of the debt securities of such series or any other series outstanding at the time of issuance. Any such additional debt securities, together with all other outstanding debt securities, will constitute a single series of securities under the applicable indenture.

United States federal income tax consequences and special considerations, if any, applicable to any such series will be described in the applicable prospectus supplement. Unless otherwise stated in the applicable prospectus supplement, the debt securities will not be listed on any securities exchange.

CF Holdings and CF Industries expect most debt securities to be issued in fully registered form without coupons. Subject to the limitations provided in the applicable indenture and in the applicable prospectus supplement, debt securities that are issued in registered form may be transferred or exchanged at the designated corporate trust office of the trustee, without the payment of any service charge, other than any tax or other governmental charge payable in connection therewith.

Unless otherwise stated in the applicable prospectus supplement, the debt securities of a series may be issued in whole or in part in the form of one or more global securities that will be deposited with, or on behalf of, a depositary identified in the applicable prospectus supplement. Global securities

Table of Contents

will be issued in registered form and in either temporary or definitive form. Unless and until it is exchanged in whole or in part for the individual debt securities, a global security may not be transferred except as a whole by the depositary for such global security to a nominee of such depositary or by a nominee of such depositary or another nominee of such depositary or any such nominee to a successor of such depositary or a nominee of such successor. The specific terms of the depositary arrangement with respect to any debt securities of a series and the rights of and limitations upon owners of beneficial interests in a global security will be described in the applicable prospectus supplement.

The debt securities and the indentures under which the debt securities are issued will be governed by and construed in accordance with the law of the State of New York.

Wells Fargo Bank, National Association is the trustee under the indenture governing the outstanding senior notes of CF Industries, and we anticipate appointing Wells Fargo Bank, National Association as the trustee under the indentures under which any of the CF Holdings or CF Industries debt securities would be issued. CF Holdings and CF Industries anticipate that the trustee under the applicable indenture with respect to any series of debt securities will also be appointed to act as the paying agent, conversion agent, registrar and custodian with regard to such debt securities. Wells Fargo Bank, National Association and its affiliates currently provide, and may in the future provide, banking and other services to CF Holdings and its subsidiaries, including CF Industries, in the ordinary course of their respective businesses. There may be more than one trustee under the applicable indenture, each with respect to one or more series of debt securities. If there are different trustees for different series of debt securities under an indenture, each trustee will be a trustee of a trust under the applicable indenture separate and apart from the trust administered by any other trustee under that indenture. Except as otherwise indicated in this prospectus or any prospectus supplement, any action permitted to be taken by a trustee may be taken by such trustee only with respect to the one or more series of debt securities for which it is the trustee under the applicable indenture.

DESCRIPTION OF GUARANTEES OF DEBT SECURITIES

This "Description of Guarantees of Debt Securities" section contains a summary description of the guarantees of CF Industries debt securities to which this prospectus relates. This summary description is not meant to be a complete description of the guarantees. At the time of an offering and sale of CF Industries debt securities, this prospectus together with the accompanying prospectus supplement will describe the material terms of the guarantees of the CF Industries debt securities being offered.

CF Holdings will fully and unconditionally guarantee the debt securities of CF Industries. Such guarantees may be secured or unsecured and senior or subordinated. The particular terms of CF Holdings' guarantees of a particular issue of CF Industries debt securities will be described in the related prospectus supplement. The guarantees of CF Industries debt securities will be governed by and construed in accordance with the law of the State of New York.

PLAN OF DISTRIBUTION

CF Holdings or CF Industries, as applicable, may sell the securities being offered hereby in one or more of the following ways from time to time:

to underwriters for resale to purchasers;

directly to purchasers; or

through agents or dealers to purchasers.

In addition, CF Holdings and CF Industries may enter into derivative or hedging transactions with third parties, or sell securities not covered by this prospectus to third parties in privately negotiated transactions. In connection with such a transaction, the third parties may sell securities covered by and pursuant to this prospectus and an applicable prospectus supplement. If so, the third parties may use securities borrowed from CF Holdings or CF Industries or others to settle such sales and may use securities received from CF Holdings or CF Industries to close out any related short positions. CF Holdings and CF Industries may also loan or pledge securities covered by this prospectus and an applicable prospectus supplement to third parties, who may sell the loaned securities or, in an event of default in the case of a pledge, sell the pledged securities pursuant to this prospectus and the applicable prospectus supplement.

The specific plan of distribution, including any underwriters, dealers, agents or direct purchasers and their compensation, for any securities offered hereunder will be identified in a prospectus supplement.

In compliance with the guidelines of the Financial Industry Regulatory Authority, Inc. ("FINRA"), the maximum discount or commission to be received by any FINRA member or independent broker-dealer may not exceed 8% of the aggregate offering price of the securities offered hereunder.

LEGAL MATTERS

The validity of the securities being offered hereby is being passed upon for CF Holdings and CF Industries by Skadden, Arps, Slate, Meagher & Flom LLP, Chicago, Illinois.

EXPERTS

The consolidated financial statements of CF Industries Holdings, Inc. and subsidiaries as of December 31, 2012 and 2011, and for each of the years in the three-year period ended December 31, 2012, and management's assessment of the effectiveness of CF Industries Holdings, Inc.'s internal control over financial reporting as of December 31, 2012, incorporated by reference in this prospectus from CF Industries Holdings, Inc.'s Annual Report on Form 10-K for the fiscal year ended December 31, 2012, have been incorporated by reference herein in reliance upon the reports of KPMG LLP, independent registered public accounting firm, incorporated by reference herein and in the registration statement of which this prospectus is a part, and upon the authority of said firm as experts in accounting and auditing.

WHERE YOU CAN FIND MORE INFORMATION

CF Holdings has filed with the SEC a registration statement on Form S-3 under the Securities Act relating to the securities covered by this prospectus. This prospectus does not contain all of the information set forth in the registration statement and the exhibits filed or incorporated by reference as part of the registration statement. For further information with respect to us and the securities being offered, we refer you to the registration statement and the exhibits filed or incorporated by reference as part of the registration statements. Statements contained in the prospectus concerning the contents of any contract or any other document are not necessarily complete. If a contract or document has been filed as an exhibit to the registration statement or otherwise filed with the SEC, we refer you to the copy of the contract or document that has been filed. Each statement in this prospectus relating to a contract or document is qualified in all respects by reference to the contract or document to which it refers. In addition, CF Holdings files annual, quarterly and periodic reports, proxy statements and other information with the SEC. The public may read and copy any materials we file with the SEC at the SEC's Public Reference Room at 100 F Street, N.E., Washington, D.C. 20549. The public may obtain information on the operation of the Public Reference Room by calling the SEC at 1-800-SEC-0330. The SEC maintains an Internet site at http://www.sec.gov that contains reports, proxy and information statements and other information regarding issuers, including CF Holdings, that file electronically with the SEC.

The SEC allows us to "incorporate by reference" the information we file with them, which means that (1) we can disclose important information to you by referring you to such information in documents we have filed with the SEC and (2) such information is considered part of this prospectus. The following documents are incorporated by reference in this prospectus:

CF Holdings' Annual Report on Form 10-K for the fiscal year ended December 31, 2012, filed with the SEC on February 27, 2013;

CF Holdings' Current Reports on Form 8-K filed with the SEC on January 4, 2013 and April 22, 2013;

the description of CF Holdings' common stock as contained in Item 1 of CF Holdings' Registration Statement on Form 8-A, filed with the SEC on August 8, 2005, including all amendments and reports filed for the purpose of updating such description; and

the description of CF Holdings' rights plan as contained in Exhibit 4.4 to CF Holdings' Registration Statement on Form S-8, filed with the SEC on August 11, 2005, including all amendments and reports filed for the purpose of updating such description.

In addition, all documents subsequently filed by CF Holdings pursuant to Section 13(a), 13(c), 14 or 15(d) of the Exchange Act prior to the termination of this offering shall be deemed to be incorporated by reference into this prospectus. The most recent information that we file with the SEC automatically updates and supersedes older information. The information contained in any such filing that is incorporated by reference herein will be deemed to be a part of this prospectus, commencing on the date on which the applicable document is filed. Nothing in this prospectus shall be deemed to incorporate by reference information furnished to, but not filed with, the SEC.

We will provide to each person, including any beneficial owner, to whom this prospectus is delivered a copy of any or all of the information that has been incorporated by reference in this prospectus but not delivered with this prospectus (other than exhibits not specifically incorporated by reference in that information), at no cost to the requestor, upon written or oral request. To receive any such copy, call or write:

CF Industries Holdings, Inc. 4 Parkway North, Suite 400 Deerfield, Illinois 60015 Attention: Secretary

Telephone: (847) 405-2400

PART II INFORMATION NOT REQUIRED IN PROSPECTUS

Item 14. Other Expenses of Issuance and Distribution.

The following table sets forth estimated expenses relating to the issuance and distribution of the securities being registered, other than underwriting discounts and commissions, to be paid by the registrant.

	Amo To Be	ount Paid
SEC registration fee	\$	*
Trustee and transfer agent fees		**
Legal fees and expenses		**
Accounting fees and expenses		**
Rating agency and listing fees		**
Printing and engraving fees and expenses		**
Miscellaneous		**
Total	\$	**

To be deferred pursuant to Rule 456(b) under the Securities Act and calculated in connection with an offering of securities under this registration statement pursuant to Rule 457(r) under the Securities Act.

These fees cannot be estimated at this time, as they are calculated based on the securities offered and the number of issuances. An estimate of the aggregate expenses in connection with the sale and distribution of the securities being offered will be included in the applicable prospectus supplement.

Item 15. Indemnification of Directors and Officers.

CF Industries Holdings, Inc. ("CF Holdings") and CF Industries, Inc. ("CF Industries") are incorporated under the laws of Delaware. Reference is made to Section 102(b)(7) of the General Corporation Law of the State of Delaware (the "DGCL"), which enables a corporation in its certificate of incorporation to eliminate or limit the personal liability of a director to the corporation or its stockholders for monetary damages for violations of the director's fiduciary duty, except (i) for any breach of the director's duty of loyalty to the corporation or its stockholders; (ii) for acts or omissions not in good faith or which involve intentional misconduct or a knowing violation of law; (iii) pursuant to Section 174 of the DGCL (providing for liability of directors for unlawful payment of dividends or unlawful stock purchases or redemptions); or (iv) for any transaction from which a director derived an improper personal benefit.

Reference is also made to Section 145 of the DGCL, which provides that a corporation may indemnify any persons, including officers and directors, who are, or are threatened to be made, parties to any threatened, pending or completed legal action, suit or proceeding, whether civil, criminal, administrative or investigative (other than an action by or in the right of such corporation), by reason of the fact that such person is or was a director, officer, employee or agent of such corporation or is or was serving at the request of such corporation as a director, officer, employee or agent of another corporation, partnership, joint venture, trust or other enterprise. The indemnity may include expenses (including attorneys' fees), judgments, fines and amounts paid in settlement actually and reasonably incurred by such person in connection with such action, suit or proceeding, provided such director, officer, employee or agent acted in good faith and in a manner the person reasonably believed to be in or not opposed to the best interests of the corporation and, with respect to any criminal action or

II-1

Table of Contents

proceeding, had no reasonable cause to believe the person's conduct was unlawful. Section 145 of the DGCL also provides that a Delaware corporation may indemnify officers and directors in an action by or in the right of the corporation under the same conditions, except that no indemnification is permitted without judicial approval if the officer or director is adjudged to be liable to the corporation. Where a present or former officer or director is successful on the merits or otherwise in the defense of any action referred to in this paragraph, the corporation must indemnify such officer or director against the expenses that such officer or director actually and reasonably incurred in connection therewith. The indemnification permitted under the DGCL is not exclusive, and a corporation is empowered to purchase and maintain insurance against liabilities whether or not indemnification would be permitted by statute.

CF Holdings' certificate of incorporation provides for indemnification of its officers and directors and their heirs and personal and legal representatives to the fullest extent permitted by the DGCL. CF Industries' bylaws provide for indemnification of its officers and directors and their heirs and personal and legal representatives to the fullest extent permitted by the DGCL. As permitted by Section 102(b)(7) of the DGCL, the certificate of incorporation of each of CF Holdings and CF Industries contains a provision eliminating the personal liability of a director to the registrant or its stockholders for monetary damages for breach of fiduciary duty as a director, subject to some exceptions.

CF Holdings has entered into separate indemnification agreements with each of its directors and officers that require CF Holdings to indemnify such persons to the fullest extent permitted by the DGCL. These indemnification agreements also require CF Holdings to advance any expenses incurred by the directors and officers as a result of any proceeding against them as to which they could be indemnified.

CF Holdings maintains, at its expense, a policy of insurance which insures directors and officers of CF Holdings and its subsidiaries, including CF Industries, subject to exclusions and deductions as are usual in these kinds of insurance policies, against specified liabilities which may be incurred in those capacities.

Item 16. Exhibits.

Exhibit No. Document

- 1.1 Underwriting agreement.*
- 2.1 Agreement and Plan of Merger dated as of July 21, 2005 by and among CF Industries Holdings, Inc., CF Merger Corp. and CF Industries, Inc. (incorporated by reference to Exhibit 2.1 to Amendment No. 3 to CF Holdings, Inc.'s Registration Statement on Form S-1 filed with the SEC on July 26, 2005, File No. 333-124949).
- 2.2 Agreement and Plan of Merger, dated March 12, 2010, among CF Industries Holdings, Inc., Composite Merger Corporation and Terra Industries Inc. (incorporated by reference to Exhibit 2.1 to CF Industries Holdings, Inc.'s Current Report on Form 8-K filed with the SEC on March 12, 2010, File No. 001-32597).
- 2.3 Purchase and Sale Agreement, dated August 2, 2012, between CF Industries Holdings, Inc. and Glencore International plc (incorporated by reference to Exhibit 2.1 to CF Industries Holdings, Inc.'s Current Report on Form 8-K filed with the SEC on August 6, 2012, File No. 001-32597).
- 4.1 Amended and Restated Certificate of Incorporation of CF Industries Holdings, Inc. (incorporated by reference to Exhibit 4.1 to CF Industries Holdings, Inc.'s Registration Statement on Form S-8 filed with the SEC on August 11, 2005, File No. 333-127422).

II-2

Table of Contents

Exhibit No. Document

- 4.2 Amended and Restated By-laws of CF Industries Holdings, Inc., as amended through December 11, 2012.
- 4.3 Specimen common stock certificate (incorporated by reference to Exhibit 4.1 to Amendment No. 2 to CF Industries Holdings, Inc.'s Registration Statement on Form S-1 filed with the SEC on July 20, 2005, File No. 333-124949).
- 4.4 Rights Agreement, dated as of July 21, 2005, between CF Industries Holdings, Inc. and The Bank of New York Mellon Corporation (formerly known as The Bank of New York), as the Rights Agent (incorporated by reference to Exhibit 4.4 to CF Industries Holdings, Inc.'s Registration Statement on Form S-8 filed with the SEC on August 11, 2005, File No. 333-127422).
- 4.5 First Amendment to Rights Agreement, dated as of August 31, 2010, by and between CF Industries Holdings, Inc. and Mellon Investor Services LLC, as successor to The Bank of New York (incorporated by reference to Exhibit 4.1 to CF Industries Holdings, Inc.'s Current Report on Form 8-K filed with the SEC on September 3, 2010, File No. 001-32597).
- 4.6 Indenture for debt securities of CF Industries Holdings, Inc. (the "CF Holdings Indenture").
- 4.7 Indenture for debt securities of CF Industries, Inc. (the "CF Industries Indenture").
- 4.8 Certificate of designation, preferences and rights with respect to CF Industries Holdings, Inc.'s preferred stock.*
- 4.9 Specimen CF Industries Holdings, Inc. preferred stock certificate.*
- 4.10 Form of debt security of CF Industries Holdings, Inc.*
- 4.11 Form of debt security of CF Industries, Inc.*
- 5.1 Opinion of Skadden, Arps, Slate, Meagher & Flom LLP.
- 12.1 Statement regarding computation of ratio of earnings to fixed charges.
- 23.1 Consent of KPMG LLP.
- 23.2 Consent of Skadden, Arps, Slate, Meagher & Flom LLP (included in exhibit 5.1).
- 24.1 Powers of attorney (included as part of the signature pages hereto).
- 25.1 Form T-1 Statement of Eligibility of Trustee under the Trust Indenture Act of 1939, as amended, for the CF Holdings Indenture.
- 25.2 Form T-1 Statement of Eligibility of Trustee under the Trust Indenture Act of 1939, as amended, for the CF Industries Indenture.

To be filed, if necessary, after the effectiveness of this registration statement as an exhibit to a post-effective amendment hereto or to a report filed with the SEC under the Securities Exchange Act of 1934, as amended.

Table of Contents

Item 17. Undertakings.

- (a) The undersigned registrant hereby undertakes:
 - (1) To file, during any period in which offers or sales are being made, a post-effective amendment to this registration statement:
 - (i) To include any prospectus required by section 10(a)(3) of the Securities Act of 1933;
 - (ii) To reflect in the prospectus any facts or events arising after the effective date of the registration statement (or the most recent post-effective amendment thereof) which, individually or in the aggregate, represent a fundamental change in the information set forth in the registration statement. Notwithstanding the foregoing, any increase or decrease in volume of securities offered (if the total dollar value of securities offered would not exceed that which was registered) and any deviation from the low or high end of the estimated maximum offering range may be reflected in the form of prospectus filed with the Commission pursuant to Rule 424(b) if, in the aggregate, the changes in volume and price represent no more than a 20% change in the maximum aggregate offering price set forth in the "Calculation of Registration Fee" table in the effective registration statement.
 - (iii) To include any material information with respect to the plan of distribution not previously disclosed in the registration statement or any material change to such information in the registration statement;

Provided, *however*, that paragraphs (a)(1)(i), (a)(1)(ii) and (a)(1)(iii) of this section do not apply if the registration statement is on Form S-3 or Form F-3 and the information required to be included in a post-effective amendment by those paragraphs is contained in reports filed with or furnished to the Commission by the registrant pursuant to section 13 or section 15(d) of the Securities Exchange Act of 1934 that are incorporated by reference in the registration statement, or is contained in a form of prospectus filed pursuant to Rule 424(b) that is a part of the registration statement.

- (2) That, for the purpose of determining any liability under the Securities Act of 1933, each such post-effective amendment shall be deemed to be a new registration statement relating to the securities offered therein, and the offering of such securities at that time shall be deemed to be the initial *bona fide* offering thereof.
- (3) To remove from registration by means of a post-effective amendment any of the securities being registered which remain unsold at the termination of the offering.
 - (4) That, for the purpose of determining liability under the Securities Act of 1933 to any purchaser:
 - (i) Each prospectus filed by the registrant pursuant to Rule 424(b)(3) shall be deemed to be part of the registration statement as of the date the filed prospectus was deemed part of and included in the registration statement; and
 - (ii) Each prospectus required to be filed pursuant to Rule 424(b)(2), (b)(5), or (b)(7) as part of a registration statement in reliance on Rule 430B relating to an offering made pursuant to Rule 415(a)(1)(i), (vii), or (x) for the purpose of providing the information required by section 10(a) of the Securities Act of 1933 shall be deemed to be part of and included in the registration statement as of the earlier of the date such form of prospectus is first used after effectiveness or the date of the first contract of sale of securities in the offering described in the prospectus. As provided in Rule 430B, for liability purposes of the issuer and any person that is at that date an underwriter, such date shall be deemed to be a new effective date of the registration statement relating to the securities in the registration

Table of Contents

statement to which that prospectus relates, and the offering of such securities at that time shall be deemed to be the initial bona fide offering thereof. Provided, however, that no statement made in a registration statement or prospectus that is part of the registration statement or made in a document incorporated or deemed incorporated by reference into the registration statement or prospectus that is part of the registration statement will, as to a purchaser with a time of contract of sale prior to such effective date, supersede or modify any statement that was made in the registration statement or prospectus that was part of the registration statement or made in any such document immediately prior to such effective date.

(5) That, for the purpose of determining liability of the registrant under the Securities Act of 1933 to any purchaser in the initial distribution of the securities:

The undersigned registrant undertakes that in a primary offering of securities of the undersigned registrant pursuant to this registration statement, regardless of the underwriting method used to sell the securities to the purchaser, if the securities are offered or sold to such purchaser by means of any of the following communications, the undersigned registrant will be a seller to the purchaser and will be considered to offer or sell such securities to such purchaser:

- (i) Any preliminary prospectus or prospectus of the undersigned registrant relating to the offering required to be filed pursuant to Rule 424;
- (ii) Any free writing prospectus relating to the offering prepared by or on behalf of the undersigned registrant or used or referred to by the undersigned registrant;
- (iii) The portion of any other free writing prospectus relating to the offering containing material information about the undersigned registrant or its securities provided by or on behalf of the undersigned registrant; and
- (iv) Any other communication that is an offer in the offering made by the undersigned registrant to the purchaser.
- (b) The undersigned registrant hereby undertakes that, for purposes of determining any liability under the Securities Act of 1933, each filing of the registrant's annual report pursuant to section 13(a) or section 15(d) of the Securities Exchange Act of 1934 (and, where applicable, each filing of an employee benefit plan's annual report pursuant to section 15(d) of the Securities Exchange Act of 1934) that is incorporated by reference in the registration statement shall be deemed to be a new registration statement relating to the securities offered therein, and the offering of such securities at that time shall be deemed to be the initial *bona fide* offering thereof.
- (c) Insofar as indemnification for liabilities arising under the Securities Act of 1933 may be permitted to directors, officers and controlling persons of the registrant pursuant to the foregoing provisions, or otherwise, the registrant has been advised that in the opinion of the Securities and Exchange Commission such indemnification is against public policy as expressed in the Act and is, therefore, unenforceable. In the event that a claim for indemnification against such liabilities (other than the payment by the registrant of expenses incurred or paid by a director, officer or controlling person of the registrant in the successful defense of any action, suit or proceeding) is asserted by such director, officer or controlling person in connection with the securities being registered, the registrant will, unless in the opinion of its counsel the matter has been settled by controlling precedent, submit to a court of appropriate jurisdiction the question whether such indemnification by it is against public policy as expressed in the Act and will be governed by the final adjudication of such issue.

SIGNATURES

Pursuant to the requirements of the Securities Act of 1933, the registrant certifies that it has reasonable grounds to believe that it meets all of the requirements for filing on Form S-3 and has duly caused this registration statement to be signed on its behalf by the undersigned, thereunto duly authorized, in the city of Deerfield, state of Illinois, on April 22, 2013.

CF INDUSTRIES HOLDINGS, INC.

By: /s/ STEPHEN R. WILSON

Name: Stephen R. Wilson

Title: President and Chief Executive Officer, Chairman of the Board of Directors

POWER OF ATTORNEY

KNOW ALL PERSONS BY THESE PRESENTS, that each person whose signature appears below constitutes and appoints Stephen R. Wilson, Dennis P. Kelleher and Douglas C. Barnard, and each of them, as attorneys-in-fact, each with the power of substitution, for him or her and in his or her name, place and stead, in any and all capacities, to sign any and all amendments (including post-effective amendments) to this registration statement, and to sign any registration statement for the same offering covered by this registration statement that is to be effective upon filing pursuant to Rule 462 promulgated under the Securities Act of 1933, as amended, and all post-effective amendments thereto, and to file the same, with all exhibits thereto and all documents in connection therewith, with the Securities and Exchange Commission, granting unto said attorneys-in-fact and agents, and each of them, full power and authority to do and perform each and every act and thing requisite and necessary to be done in and about the premises, as fully to all intents and purposes as he or she might or could do in person, hereby ratifying and confirming all that such attorneys-in-fact and agents or any of them, or his or their substitute or substitutes, may lawfully do or cause to be done by virtue hereof.

Pursuant to the requirements of the Securities Act of 1933, this registration statement has been signed below by the following persons in the capacities and on the dates indicated.

Signature	Title	Date	
/s/ STEPHEN R. WILSON	President and Chief Executive Officer, Chairman of the		
Stephen R. Wilson	Board of Directors (Principal Executive Officer)	April 22, 2013	
/s/ DENNIS P. KELLEHER	Senior Vice President and Chief Financial Officer	April 22, 2013	
Dennis P. Kelleher	(Principal Financial Officer)	April 22, 2013	
/s/ RICHARD A. HOKER	Vice President and Corporate Controller (Principal	April 22, 2013	
Richard A. Hoker	Accounting Officer)	April 22, 2013	
/s/ ROBERT C. ARZBAECHER	Director	April 22, 2013	
Robert C. Arzbaecher	Director	<i>А</i> рии 22, 2013	

Table of Contents

Signature	ī	Fitle	Date	
/s/ WILLIAM DAVISSON				
William Davisson	Director		April 22, 2013	
/s/ STEPHEN A. FURBACHER	7			
Stephen A. Furbacher	Director		April 22, 2013	
/s/ STEPHEN J. HAGGE	D:		A 31.22 2012	
Stephen J. Hagge	Director		April 22, 2013	
/s/ JOHN D. JOHNSON	Director		April 22, 2012	
John D. Johnson	Director		April 22, 2013	
/s/ ROBERT G. KUHBACH	Director		April 22, 2013	
Robert G. Kuhbach	Director		April 22, 2013	
/s/ EDWARD A. SCHMITT	Director		April 22, 2013	
Edward A. Schmitt	Director		<i>А</i> рии 22, 2013	

SIGNATURES

Pursuant to the requirements of the Securities Act of 1933, the registrant certifies that it has reasonable grounds to believe that it meets all of the requirements for filing on Form S-3 and has duly caused this registration statement to be signed on its behalf by the undersigned, thereunto duly authorized, in the city of Deerfield, state of Illinois, on April 22, 2013.

CF INDUSTRIES, INC.

By: /s/ STEPHEN R. WILSON

Name: Stephen R. Wilson

Title: President and Chief Executive Officer, Chairman of the Board of Directors

POWER OF ATTORNEY

KNOW ALL PERSONS BY THESE PRESENTS, that each person whose signature appears below constitutes and appoints Stephen R. Wilson, Dennis P. Kelleher and Douglas C. Barnard, and each of them, as attorneys-in-fact, each with the power of substitution, for him or her and in his or her name, place and stead, in any and all capacities, to sign any and all amendments (including post-effective amendments) to this registration statement, and to sign any registration statement for the same offering covered by this registration statement that is to be effective upon filing pursuant to Rule 462 promulgated under the Securities Act of 1933, as amended, and all post-effective amendments thereto, and to file the same, with all exhibits thereto and all documents in connection therewith, with the Securities and Exchange Commission, granting unto said attorneys-in-fact and agents, and each of them, full power and authority to do and perform each and every act and thing requisite and necessary to be done in and about the premises, as fully to all intents and purposes as he or she might or could do in person, hereby ratifying and confirming all that such attorneys-in-fact and agents or any of them, or his or their substitute or substitutes, may lawfully do or cause to be done by virtue hereof.

Pursuant to the requirements of the Securities Act of 1933, this registration statement has been signed below by the following persons in the capacities and on the dates indicated.

Signature	Title	Date	
/s/ STEPHEN R. WILSON	President and Chief Executive Officer, Chairman of the		
Stephen R. Wilson	Board of Directors (Principal Executive Officer)	April 22, 2013	
/s/ DENNIS P. KELLEHER	Senior Vice President and Chief Financial Officer and	April 22, 2013	
Dennis P. Kelleher	Director (Principal Financial Officer)	April 22, 2015	
/s/ RICHARD A. HOKER	Vice President and Corporate Controller (Principal	April 22, 2013	
Richard A. Hoker	Accounting Officer)	April 22, 2013	
/s/ DOUGLAS C. BARNARD	- Director	April 22, 2013	
Douglas C. Barnard	Director	лрні 22, 2013	

EXHIBIT INDEX

Exhibit No. Document

- 1.1 Underwriting agreement.*
- 2.1 Agreement and Plan of Merger dated as of July 21, 2005 by and among CF Industries Holdings, Inc., CF Merger Corp. and CF Industries, Inc. (incorporated by reference to Exhibit 2.1 to Amendment No. 3 to CF Holdings, Inc.'s Registration Statement on Form S-1 filed with the SEC on July 26, 2005, File No. 333-124949).
- 2.2 Agreement and Plan of Merger, dated March 12, 2010, among CF Industries Holdings, Inc., Composite Merger Corporation and Terra Industries Inc. (incorporated by reference to Exhibit 2.1 to CF Industries Holdings, Inc.'s Current Report on Form 8-K filed with the SEC on March 12, 2010, File No. 001-32597).
- 2.3 Purchase and Sale Agreement, dated August 2, 2012, between CF Industries Holdings, Inc. and Glencore International plc (incorporated by reference to Exhibit 2.1 to CF Industries Holdings, Inc.'s Current Report on Form 8-K filed with the SEC on August 6, 2012, File No. 001-32597).
- 4.1 Amended and Restated Certificate of Incorporation of CF Industries Holdings, Inc. (incorporated by reference to Exhibit 4.1 to CF Industries Holdings, Inc.'s Registration Statement on Form S-8 filed with the SEC on August 11, 2005, File No. 333-127422).
- 4.2 Amended and Restated By-laws of CF Industries Holdings, Inc., as amended through December 11, 2012.
- 4.3 Specimen common stock certificate (incorporated by reference to Exhibit 4.1 to Amendment No. 2 to CF Industries Holdings, Inc.'s Registration Statement on Form S-1 filed with the SEC on July 20, 2005, File No. 333-124949).
- 4.4 Rights Agreement, dated as of July 21, 2005, between CF Industries Holdings, Inc. and The Bank of New York Mellon Corporation (formerly known as The Bank of New York), as the Rights Agent (incorporated by reference to Exhibit 4.4 to CF Industries Holdings, Inc.'s Registration Statement on Form S-8 filed with the SEC on August 11, 2005, File No. 333-127422).
- 4.5 First Amendment to Rights Agreement, dated as of August 31, 2010, by and between CF Industries Holdings, Inc. and Mellon Investor Services LLC, as successor to The Bank of New York (incorporated by reference to Exhibit 4.1 to CF Industries Holdings, Inc.'s Current Report on Form 8-K filed with the SEC on September 3, 2010, File No. 001-32597).
- 4.6 Indenture for debt securities of CF Industries Holdings, Inc. (the "CF Holdings Indenture").
- 4.7 Indenture for debt securities of CF Industries, Inc. (the "CF Industries Indenture").
- 4.8 Certificate of designation, preferences and rights with respect to CF Industries Holdings, Inc.'s preferred stock.*
- 4.9 Specimen CF Industries Holdings, Inc. preferred stock certificate.*
- 4.10 Form of debt security of CF Industries Holdings, Inc.*
- 4.11 Form of debt security of CF Industries, Inc.*
- 5.1 Opinion of Skadden, Arps, Slate, Meagher & Flom LLP.
- 12.1 Statement regarding computation of ratio of earnings to fixed charges.
- 23.1 Consent of KPMG LLP.

Table of Contents

Exhibit No. 23.2	Document Consent of Skadden, Arps, Slate, Meagher & Flom LLP (included in exhibit 5.1).
24.1	Powers of attorney (included as part of the signature pages hereto).
25.1	Form T-1 Statement of Eligibility of Trustee under the Trust Indenture Act of 1939, as amended, for the CF Holdings Indenture.
25.2	Form T-1 Statement of Eligibility of Trustee under the Trust Indenture Act of 1939, as amended, for the CF Industries Indenture.

To be filed, if necessary, after the effectiveness of this registration statement as an exhibit to a post-effective amendment hereto or to a report filed with the SEC under the Securities Exchange Act of 1934, as amended.