

CF Industries Holdings, Inc.
 Form 4
 September 12, 2008

FORM 4 UNITED STATES SECURITIES AND EXCHANGE COMMISSION
 Washington, D.C. 20549

OMB APPROVAL

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STATEMENT OF CHANGES IN BENEFICIAL OWNERSHIP OF SECURITIES

Filed pursuant to Section 16(a) of the Securities Exchange Act of 1934, Section 17(a) of the Public Utility Holding Company Act of 1935 or Section 30(h) of the Investment Company Act of 1940

(Print or Type Responses)

1. Name and Address of Reporting Person *
 Chase Stephen G

2. Issuer Name and Ticker or Trading Symbol
 CF Industries Holdings, Inc. [CF]

5. Relationship of Reporting Person(s) to Issuer

(Check all applicable)

(Last) (First) (Middle)
 C/O CF INDUSTRIES HOLDINGS, INC., 4 PARKWAY NORTH, SUITE 400

3. Date of Earliest Transaction (Month/Day/Year)
 09/11/2008

____ Director _____ 10% Owner
 Officer (give title below) _____ Other (specify below)
 VP, Corporate Planning

(Street)
 DEERFIELD, IL 60015

4. If Amendment, Date Original Filed(Month/Day/Year)

6. Individual or Joint/Group Filing(Check Applicable Line)
 Form filed by One Reporting Person
 Form filed by More than One Reporting Person

(City) (State) (Zip)

Table I - Non-Derivative Securities Acquired, Disposed of, or Beneficially Owned

1. Title of Security (Instr. 3)	2. Transaction Date (Month/Day/Year)	2A. Deemed Execution Date, if any (Month/Day/Year)	3. Transaction Code (Instr. 8)	4. Securities Acquired (A) or Disposed of (D) (Instr. 3, 4 and 5)	5. Amount of Securities Beneficially Owned Following Reported Transaction(s) (Instr. 3 and 4)	6. Ownership Form: Direct (D) or Indirect (I) (Instr. 4)	7. Nature of Indirect Ownership (Instr. 4)	
				(A) or (D)	Price			
				Code	V	Amount		
Common stock, par value \$0.01 per share	09/11/2008		M ⁽¹⁾	10,000	A	\$ 16	20,613	D
Common stock, par value \$0.01 per share	09/11/2008		S ⁽¹⁾	10,000	D	\$ 105.1909	10,613	D

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Reminder: Report on a separate line for each class of securities beneficially owned directly or indirectly.

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(9-02)

Table II - Derivative Securities Acquired, Disposed of, or Beneficially Owned
(e.g., puts, calls, warrants, options, convertible securities)

1. Title of Derivative Security (Instr. 3)	2. Conversion or Exercise Price of Derivative Security	3. Transaction Date (Month/Day/Year)	3A. Deemed Execution Date, if any (Month/Day/Year)	4. Transaction Code (Instr. 8)	5. Number of Derivative Securities Acquired (A) or Disposed of (D) (Instr. 3, 4, and 5)	6. Date Exercisable and Expiration Date (Month/Day/Year)	7. Title and Amount of Underlying Securities (Instr. 3 and 4)		
						Date Exercisable	Expiration Date	Title	Amount or Number of Shares
				Code	V	(A)	(D)		
Employee Stock Option (right to buy)	\$ 16	09/11/2008		M ⁽¹⁾	10,000	⁽²⁾	08/10/2015	Common stock, par value \$0.01 per share	10,000

Reporting Owners

Reporting Owner Name / Address	Relationships			
	Director	10% Owner	Officer	Other
Chase Stephen G C/O CF INDUSTRIES HOLDINGS, INC. 4 PARKWAY NORTH, SUITE 400 DEERFIELD, IL 60015			VP, Corporate Planning	

Signatures

/s/ Douglas C. Barnard, by power of attorney
Date: 09/12/2008

__Signature of Reporting Person

Explanation of Responses:

- * If the form is filed by more than one reporting person, see Instruction 4(b)(v).
- ** Intentional misstatements or omissions of facts constitute Federal Criminal Violations. See 18 U.S.C. 1001 and 15 U.S.C. 78ff(a).
- (1) The sales reported in this Form 4 were effected pursuant to a Rule 10b5-1 trading plan adopted by the reporting person on May 16, 2008.
- (2) The options vest in three equal installments on August 10, 2006, 2007, and 2008.

Note: File three copies of this Form, one of which must be manually signed. If space is insufficient, see Instruction 6 for procedure. Potential persons who are to respond to the collection of information contained in this form are not required to respond unless the form displays a currently valid OMB number.